



# SEQUENCE LISTING

<110> INNOGENETICS N.V.

<120> New sequences of hepatitis C virus genotypes and their use as prophylactic, therapeutic and diagnostic agents.

<130> 2551-106

<140> US 09/851,138

<141> 2001-05-09

<150> EP 94870166.9

<151> 1994-10-21

<150> EP 95870076.7

<151> 1995-06-28

<160> 302

<170> PatentIn version 3.1

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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Xaa Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Xaa Arg Xaa Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp  
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gtgtatcatg tcaccaacga ctgttccaac tcgagcatca tctatgagat ggacggtatg 180

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cgtcacgtcg acttgcttgt tgggggnncc acgttctgtt ccgctatgta cgtggggrgac	360
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35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Asp Gly Met Ile Met His Tyr  
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asp Asn His Leu Arg Cys Trp  
65 70 75 80

Met Ala Leu Thr Pro Thr Leu Ala Val Lys Xaa Ala Ser Val Pro Thr  
85 90 95

Xaa Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Xaa Xaa Thr Phe  
100 105 110

Cys Ser Ala Met Tyr Val Xaa Asp Leu Cys Gly Ser Val Phe Leu Ala  
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Cys Asn Cys Ser Ile  
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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Asp Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Gln Ser Asp Gly Xaa Xaa Trp Ala Gln Pro Gly  
 65 70 75 80

His Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
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Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro  
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 cgccatgtcg acttgctggg tgggacagcc gcgtttcggt ccgctatgta cgtggggggac 360  
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His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu Thr Asn Asp Cys  
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala  
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp  
65 70 75 80

Met Xaa Leu Thr Pro Thr Leu Ala Val Lys Asp Ala Asn Val Pro Thr  
85 90 95

Ala Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Thr Ala Ala Phe  
100 105 110

Arg Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val  
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Cys Asn Cys Ser Ile  
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Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala



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Ile	Pro	Lys	Ala	Arg	Arg	Pro	Glu	Gly	Arg	Ser	Trp	Ala	Gln	Pro	Gly		
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Tyr	Pro	Trp	Pro	Leu	Tyr	Ala	Asn	Glu	Gly	Cys	Gly	Trp	Ala	Gly	Trp		
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				165					170					175			
Phe	Leu	Leu	Xaa	Leu	Leu	Ser	Cys	Leu	Thr	Val	Pro	Thr	Ser	Ala	Tyr		
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 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Asp Arg Xaa Ala Thr Gly Arg Ser Trp Gly Arg Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
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gccgtgagca aacctggtgc tctcaccaag ggactgcggg cacgcattga tgccgtcgtg      420

atgtccgcca ccctctgctc tgccctgtac gtgggagatg tgtgcggcgc agtgatgata      480

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 35 40 45

Ser Ile Phe Xaa Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser  
 50 55 60

Xaa Val Glu Val Lys Asn Thr Ser Gln Ala Tyr Met Ala Thr Asn Asp  
 65 70 75 80

Cys Ser Asn Asn Ser Ile Val Trp Gln Leu Xaa Asp Ala Val Leu His  
 85 90 95

Val Pro Gly Cys Val Pro Cys Glu Asn Ser Ser Gly Arg Phe His Cys  
 100 105 110

Trp Ile Pro Ile Ser Pro Asn Ile Ala Val Ser Lys Pro Gly Ala Leu  
 115 120 125

Thr Lys Gly Leu Arg Ala Arg Ile Asp Ala Val Val Met Ser Ala Thr  
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile  
 145 150 155 160

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Glu Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met  
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Ala

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ctcttgtctt gtatcacctg gcccggtgtct gccatacagg ttaagaacaa cagccacttc 600
tacatggcga ctaatgactg tgccaatgac agcatcgtct ggcagctcag ggacgcggtg 660
ctccatgttc ctggatgtgt cccctgtgag aggtcaggta ataggacctt ctggttgaca 720
gcgggtctcgc ccaacgtggc tgtgagccga cctgggtgctc tcactagagg tctgcgggct 780
cacattgata ccacgtgat gtccgccacc ctctgctctg ccctatacat aggggacctt 840
tgcggcgctg tgatgatagc agcgcaagtt gccgtcgtct caccgcaata ccatactttt 900
gtccaggaat gcaactgctc catataccca ggccatatca caggacatcg aatggnn 957

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<210> 18
<211> 319
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (131)..(131)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (319)..(319)
<223> Xaa represents any amino acid

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<400> 18

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Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1           5           10           15

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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20           25           30

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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala

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35

40

45

Pro Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
 100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val  
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
 145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala Ile  
 180 185 190

Gln Val Lys Asn Asn Ser His Phe Tyr Met Ala Thr Asn Asp Cys Ala  
 195 200 205

Asn Asp Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro  
 210 215 220

Gly Cys Val Pro Cys Glu Arg Ser Gly Asn Arg Thr Phe Cys Trp Thr  
 225 230 235 240

Ala Val Ser Pro Asn Val Ala Val Ser Arg Pro Gly Ala Leu Thr Arg  
 245 250 255

Gly Leu Arg Ala His Ile Asp Thr Ile Val Met Ser Ala Thr Leu Cys  
 260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Ile Ala Ala  
 275 280 285

Gln Val Ala Val Val Ser Pro Gln Tyr His Thr Phe Val Gln Glu Cys  
 290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa  
 305 310 315

<210> 19  
 <211> 447  
 <212> DNA  
 <213> hepatitis C virus

<400> 19  
 gacggggtaa attatgcaac agggaatctg cctgggttgct ctttctctat cttcttggtg 60  
 gctcttctgt cttgtgtcac cgtgcctgtc tctgccgtgc aggttaagaa caccagtacc 120  
 atgtacatgg caaccaatga ctgttccaac aacagcatca tctggcaaatt gcagggcgcg 180  
 gtgcttcatg ttcttgatg tgtcccgtgt gagttgcagg gcaataagtc ccggtgctgg 240  
 ataccggtca ctcccaacgt ggctgtgaac cagcccggcg ccctcactag gggcttgctgg 300  
 acgcacattg acaccatcgt gatggtcgct acgctctgtt ctgcactcta catcggggac 360  
 gtgtgtggcg cggatgatgat agctgctcag gttgtcattg tctcgccgca acatcacaac 420  
 ttttcccagg attgcaattg ttccatc 447

<210> 20  
 <211> 149  
 <212> PRT  
 <213> hepatitis C virus

<400> 20

Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
 1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala

20	25	30
Val Gln Val Lys Asn Thr Ser Thr Met Tyr Met Ala Thr Asn Asp Cys		
35	40	45
Ser Asn Asn Ser Ile Ile Trp Gln Met Gln Gly Ala Val Leu His Val		
50	55	60
Pro Gly Cys Val Pro Cys Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp		
65	70	75
Ile Pro Val Thr Pro Asn Val Ala Val Asn Gln Pro Gly Ala Leu Thr		
85	90	95
Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Met Val Ala Thr Leu		
100	105	110
Cys Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Ala Val Met Ile Ala		
115	120	125
Ala Gln Val Val Ile Val Ser Pro Gln His His Asn Phe Ser Gln Asp		
130	135	140
Cys Asn Cys Ser Ile		
145		

<210> 21  
 <211> 310  
 <212> DNA  
 <213> hepatitis C virus

<400> 21  
 atgagcacia atcctaaacc tcaaagaaaa accaaaagaa acactaaccg ccgcccacag 60  
 gacgttaagt tcccggggcg tggccagatc gttggcggag tatacttggt gccgcgcagg 120  
 ggcccccggt tgggtgtgcg cgcgacgagg aaaacttccg aacgggtccca gccacgtggg 180  
 aggcgccagc ccattccctaa agatcggcgc tccactggca aatcctgggg acgtccagga 240  
 tacccttggc ccctgtatgg gaacgagggc cttggttggg caggatggct cttgtcccct 300  
 cgaggctctc 310

<210> 22  
 <211> 48  
 <212> PRT  
 <213> hepatitis C virus

<400> 22

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Arg Ser Leu Ala  
 20 25 30

Glu Tyr Thr Cys Ala Arg Arg Gly Lys Leu Arg Arg Ser Ser Met Gly  
 35 40 45

<210> 23  
 <211> 447  
 <212> DNA  
 <213> hepatitis C virus

<400> 23  
 gacgggataa actacgcaac aggggaatctg cccggttgct ctttttctat cttcttgctg 60  
 gccttgctat cctgtctcac tgtgccggcg tccgctgtgc aggtcaagaa caccagccac 120  
 tcttatatgg tgaccaatga ttgctcaaac agcagcattg tctggcagct taaggatgct 180  
 gtgcttcacg tccctggatg tgttccatgt gagaggcacc aaaatcagtc tcgctgctgg 240  
 atacctgtga cacccaatgt ggccgtgagc caacctggcg cgctcaccag gggtttgcg 300  
 acgcacattg acaccatcgt tgcgtctgct accgtctgct cagctttgta tgtgggcgac 360  
 ttctgcggcg cagtgatgtt ggtctctcaa tttttcatga tctccctca gcaccacatc 420  
 ttctgccagg attgcaactg ctcgata 447

<210> 24  
 <211> 149  
 <212> PRT  
 <213> hepatitis C virus

<400> 24

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala  
20 25 30

Val Gln Val Lys Asn Thr Ser His Ser Tyr Met Val Thr Asn Asp Cys  
35 40 45

Ser Asn Ser Ser Ile Val Trp Gln Leu Lys Asp Ala Val Leu His Val  
50 55 60

Pro Gly Cys Val Pro Cys Glu Arg His Gln Asn Gln Ser Arg Cys Trp  
65 70 75 80

Ile Pro Val Thr Pro Asn Val Ala Val Ser Gln Pro Gly Ala Leu Thr  
85 90 95

Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Ala Ser Ala Thr Val  
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Phe Cys Gly Ala Val Met Leu Val  
115 120 125

Ser Gln Phe Phe Met Ile Ser Pro Gln His His Ile Phe Val Gln Asp  
130 135 140

Cys Asn Cys Ser Ile  
145

<210> 25

<211> 356

<212> DNA

<213> hepatitis C virus

<400> 25

gacgggataa actatgcaac aggggaacctg cctgggttgct ccttttctat cttcttactg

60

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gccctgcttt cttgcatcac cgtgccggtc tctgccgtgc aagttgcgaa ccgcagtggc 120
tcttacatgg tgaccaatga ttgctcgaac agcagcatcg tttggcagct cgaggaggcc 180
gtccttcacg tccctggatg tgttccctgt gagtggaagg acaacacctc ccgctgctgg 240
ataccggtca cccctaacat cgctgtgagc caacctggcg cgcttaccaa gggcctgcgg 300
acacatattg acatcattgt cgcgtccgcc acgttctgct ctgccttgta tgtggg 356

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<210> 26
<211> 118
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

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<400> 26

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Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1           5           10           15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala
          20           25           30

Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val Thr Asn Asp Cys
          35           40           45

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Glu Ala Val Leu His Val
          50           55           60

Pro Gly Cys Val Pro Cys Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp
65           70           75           80

Ile Pro Val Thr Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Xaa Thr
          85           90           95

Lys Gly Leu Arg Thr His Ile Asp Ile Ile Val Ala Ser Ala Thr Phe
          100          105          110

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Cys Ser Ala Leu Tyr Val  
115

<210> 27  
<211> 310  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (283)..(284)  
<223> n represents any nucleotide

<400> 27  
atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg cgcgcccatg 60  
gacgttaagt tcccgggtgg tggccagatc gttggcggag tttacttggt gccgcgcagg 120  
ggccccaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180  
agacgccaac ctatcccaa ggcgcgtcga tccgagggaa ggtcctgggc acagccagga 240  
tatccatggc ctctttacgg taatgagggg tgcgggtggg cannatggct cttgtcccc 300  
cgcggttctc 310

<210> 28  
<211> 117  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (95)..(95)  
<223> Xaa represents any amino acid

<400> 28

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
 100 105 110

Arg Arg Arg Ser Arg  
 115

<210> 29  
 <211> 447  
 <212> DNA  
 <213> hepatitis C virus

<400> 29  
 gacgggatca attttgcaac agggaaacctc cccgggttgct ccttttctat cttcctcttg 60  
 gcactcctct cgtgcctgac tgtccccgct tcggccatca actatcgcaa tgtctcgggc 120  
 atttactatg tcaccaatga ttgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180  
 atcttgacc tcccagggtg cgtgacctgc gtgagagagg ggaatcagtc acgttgctgg 240  
 gtagccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg 300  
 agtcatgtgg acttgatggg gggggccgcc actgtttgtt cagcccttta catcggggat 360  
 ttrtggtggyg gcttgttcct agtcggtcag atgttctctt tccgaccaag gcgccactgg 420  
 actactcaag attgcaattg ttccatc 447

<210> 30  
 <211> 149



<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (121)..(121)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (123)..(123)  
<223> Xaa represents any amino acid

<400> 30

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala  
20 25 30

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val Thr Asn Asp Cys  
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu  
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Gly Asn Gln Ser Arg Cys Trp  
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu  
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val  
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Xaa Cys Xaa Gly Leu Phe Leu Val  
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp  
130 135 140

Cys Asn Cys Ser Ile  
145

<210> 31  
<211> 447  
<212> DNA  
<213> hepatitis C virus

<400> 31  
gacgggatca attatgcaac aggggaacctt cccgggttgc ttttttctat ctctctcttg 60  
gcactctctc cgtgcctgac tgttcccgc tgggccatta actaccgcaa cacctcgggc 120  
atctaccacg tcaccaatga ctgcccgaac tcgagcatag tttatgaggc cgaccaccac 180  
atcttgacac ttccaggttg cgtgccctgc gtgagaactg ggaatcagtc acgttgctgg 240  
gtggccctta ctctaccgt cgcagcgcca tacatcggcg caccgcttga gtctctgcgg 300  
agtcattgtg atctgatggt gggggctgcc actgtttgct cagcccttta catcggggat 360  
ttgtgtggcg gcttgttctt ggttggtcag atgttttctt tccgaccacg acgccactgg 420  
actgccacgg attgcaattg ttctatc 447

<210> 32  
<211> 149  
<212> PRT  
<213> hepatitis C virus

<400> 32

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala  
20 25 30

Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val Thr Asn Asp Cys  
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu  
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp  
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu  
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val  
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val  
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Ala Gln Asp  
130 135 140

Cys Asn Cys Ser Ile  
145

<210> 33  
<211> 447  
<212> DNA  
<213> hepatitis C virus

<400> 33  
gacgggatta attatgcaac aggggaatctt cccggttgct ctttttctat cttcctcttg 60  
gcacttctct cgtgcctgac tgtccccgct tcggccatta actaccacaa cacctcgggc 120  
atctatcata tcaccaacga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180  
atcttgcatc tcccaggttg cgtgccttgc gtgagagtgg ggaatcagtc gagttgctgg 240  
gtggccctta cccctacat cgcagcgcca tacatcggcg caccgcttga gtccttgcg 300  
agtcagtgg atctgatggg gggggcgggc actgtctgtt cagcccttta catcggggat 360  
ttgtgtggcg gtgcgttctt gggttggtcag atgttctctt tccgaccacg gcgccactgg 420  
accaccaag attgcaactg ctccatc 447

<210> 34  
<211> 149  
<212> PRT

<213> hepatitis C virus

<400> 34

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala  
20 25 30

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys  
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu  
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Ser Cys Trp  
65 70 75 80

Val Ala Leu Thr Pro Thr Ile Ala Ala Pro Tyr Ile Gly Ala Pro Leu  
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val  
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ala Phe Leu Val  
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp  
130 135 140

Cys Asn Cys Ser Ile  
145

<210> 35

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 35

gacgggatca attatgcaac aggggaatatt cccgggttgct cyttttctat cttccttytg	60
gcacttctct cgtgtctgac tgtccccgct tgggccacta actatcgcaa cgtctcgggc	120
atctaccatg tcaccaatga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac	180
atcttagcac ttccaggttg cgtgccctgc gtgagagtgg ggaaccagtc acgctgctgg	240
gtggccctta cccctaccgt cgcagcgcca tacaccgagg cgccgcttga gtccctgcgg	300
agtcagtggg atctgatggg gggagctgcc actgtttgtt cagcccttta catcggggag	360
ttgtgtggcg gcttgttctt ggttggtcag atgttctctt tycagcctcg gcgccactgg	420
actaccaggg attgcaattg ttccatc	447

<210> 36  
 <211> 149  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (14)..(14)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (20)..(20)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (120)..(120)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (134)..(134)  
 <223> Xaa represents any amino acid

<400> 36

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser

1	5	10	15
Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala	20	25	30
Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys	35	40	45
Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu	50	55	60
Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp	65	70	80
Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu	85	90	95
Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val	100	105	110
Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val	115	120	125
Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp	130	135	140
Cys Asn Cys Ser Ile	145		

<210> 37  
 <211> 447  
 <212> DNA  
 <213> hepatitis C virus

<400> 37	
gacgggatta attatgcaac agggaayctc cccggttgct ctttttctat cttcctcttg	60
gcacttctct cgtgcctgac tgtccccgct tcggccacca actaccgcaa tgtctcgggc	120
attaccatg tcaccaatga ctgcccgaat tcaagcatag tgtttgaggc cgaccatcac	180
atcttgacc ttccaggatg cgtgccctgc gtgaaagagg gaaatcattc acgctgctgg	240

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gtggccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg      300
agtcattgtg atgtgatggg gggggctgcc actgtttgtt cagcccttta catcggggat      360
ctgtgcgggtg gcttgttcct ggttggtcag atgttctctt tccgaccacg gcgcactgg      420
actaccaggg aatgcaattg ttccatc                                          447

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<210> 38
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa represents any amino acid

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<400> 38

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Asp Gly Ile Asn Tyr Ala Thr Gly Xaa Leu Pro Gly Cys Ser Phe Ser
1           5           10           15

```

```

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20           25           30

```

```

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35           40           45

```

```

Pro Asn Ser Ser Ile Val Phe Glu Ala Asp His His Ile Leu His Leu
50           55           60

```

```

Pro Gly Cys Val Pro Cys Val Lys Glu Gly Asn His Ser Arg Cys Trp
65           70           75           80

```

```

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85           90           95

```

```

Glu Ser Leu Arg Ser His Val Asp Val Met Val Gly Ala Ala Thr Val
100          105          110

```

```

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
115          120          125

```

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu  
 130 135 140

Cys Asn Cys Ser Ile  
 145

<210> 39  
 <211> 447  
 <212> DNA  
 <213> hepatitis C virus

<400> 39  
 gacgggatca attatgcaac agggaaacctc cccgggtgct ctttctctat cttcatcctg 60  
 gcacttctct cgtgcctgac tgtcccgccc tcggctcagc attatcgga tgtctcgggc 120  
 atttaccacg tcaccaacga ctgcccgaac tccagcatag tgtatgagtc cgaccatcac 180  
 atcttacacc taccaggggtg tgtaccctgt gtgaagactg ggaacacttc gcgctgctgg 240  
 gtggccttaa cacctaccgt ggccgcgccc atactttcgg ctccacttat gtccgtacgg 300  
 cggcatgtgg atctgatggg ggggtgcagct accctatcgt ctgccctcta cgttggagac 360  
 ctctgcgggg gtgccttcct agtggggcag atgttcacct tccagccgcg tcgccactgg 420  
 actgtccaag actgcaactg ttccatc 447

<210> 40  
 <211> 149  
 <212> PRT  
 <213> hepatitis C virus

<400> 40

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
 1 5 10 15

Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala  
 20 25 30

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys



35

40

45

Pro Asn Ser Ser Ile Val Tyr Glu Ser Asp His His Ile Leu His Leu  
 50 55 60

Pro Gly Cys Val Pro Cys Val Lys Thr Gly Asn Thr Ser Arg Cys Trp  
 65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Ile Leu Ser Ala Pro Leu  
 85 90 95

Met Ser Val Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu  
 100 105 110

Ser Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val  
 115 120 125

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp  
 130 135 140

Cys Asn Cys Ser Ile  
 145

<210> 41  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (383)..(383)  
 <223> n represents any nucleotide

<220>  
 <221> misc\_feature  
 <222> (924)..(924)  
 <223> n represents any nucleotide

<220>  
 <221> misc\_feature  
 <222> (387)..(387)  
 <223> n represents any nucleotide

<220>  
 <221> misc\_feature  
 <222> (928)..(928)  
 <223> n represents any nucleotide

<400> 41  
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60  
 gacgtcaagt tcccggggcgg cggccagatc gttgggtggag tttacttggt gccgcgcagg 120  
 ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacggtccca gcctagaggc 180  
 aggcgccagc ccatacaaaa ggtacgccag ccgacaggcc gtagctgggg tcaacccggc 240  
 tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtccccc 300  
 cgcgggtctc gtcctaattg gggccccaac gacccccggc gaagggtccc caacttgggt 360  
 aaggtcatcg atacccttac atncggncta gccgacctca tggggtacat ccctgtccta 420  
 ggagggccgc ttggcggcgt tgcggctgcc ctggcgcatg gcgttagggc aatcgaggac 480  
 ggggtcaatt acgcaacagg gaatcttcct ggttgctcct tttctatctt cctcttagca 540  
 ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggatc 600  
 taccatctta ccaatgactg ctccaacaac agcatcgttt ttgaggcgga gaccatgata 660  
 ctgcatcttc caggttggtg cccatgtatc aaggcgggga atgagtcacg atgttggtc 720  
 cctgtctccc ccaccttagc cgtccccaac tcatcagtg ccaatccacgg gtttcgccga 780  
 cacgtagacc tcctcgttgg ggcagcggca ttttgttcgg ccatgtacat cggagacctc 840  
 tgtggtagca taatcttggg agggcagctt tttactttca ggctaagta ccatcaggtt 900  
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 42  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (128)..(129)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (308)..(308)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (310)..(310)  
 <223> Xaa represents any amino acid

<400> 42

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa  
 115 120 125

Xaa Leu Ala Asp Leu Met Gly Tyr Ile Pro Val Leu Gly Gly Pro Leu  
 130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp

145                      150                      155                      160  
 Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
                                  165                      170                      175  
 Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ile  
                                  180                      185                      190  
 Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu Thr Asn Asp Cys Ser  
                                  195                      200                      205  
 Asn Asn Ser Ile Val Phe Glu Ala Glu Thr Met Ile Leu His Leu Pro  
                                  210                      215                      220  
 Gly Cys Val Pro Cys Ile Lys Ala Gly Asn Glu Ser Arg Cys Trp Leu  
 225                                   230                      235                      240  
 Pro Val Ser Pro Thr Leu Ala Val Pro Asn Ser Ser Val Pro Ile His  
                                  245                      250                      255  
 Gly Phe Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys  
                                  260                      265                      270  
 Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Ser Ile Ile Leu Val Gly  
                                  275                      280                      285  
 Gln Leu Phe Thr Phe Arg Pro Lys Tyr His Gln Val Thr Gln Asp Cys  
                                  290                      295                      300  
 Asn Cys Ser Xaa Asn Xaa Gly His Val Thr Gly His Arg Met Ala  
 305                                   310                      315

<210> 43  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (446)..(446)  
 <223> n represents any nucleotide

<220>

<221> misc\_feature  
<222> (467)..(467)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (470)..(470)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (483)..(483)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (500)..(500)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (513)..(514)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (520)..(520)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (531)..(531)  
<223> n represents any nucleotide

<400> 43  
atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acaccatccg cgcgccacag 60  
gacgtcaagt tcccgggtgg cggccagatc gttggtggag tctacttgct gccgcgcagg 120  
ggcccgcgct tgggtgtgcg cgcgacgaga aagacttctg aacggtccca gccagagggt 180

aggcgccaac caatacccaa agtgcgccac caaacgggcc gtacctgggc ccagcccggg	240
tacccttggc ctctttatgg aaatgagggc tgtggttggg caggctggct cctgtccccc	300
cgcggtcttc gcccaaattg gggcccaaac gacccccggc ggaggtcccg caacttgggt	360
aaagtcacgc acacccttac ttgcggcttc gccgacctca tggggtatat ccctgtcgta	420
ggcgctccgw tgggaggcgt cgcggnngcc ttggcgcatg gggtcanggn catcgaggac	480
gngntaaatt acgcaacagn gaatcttccc ggnngctctn tctctatctt nctcttggca	540
cttctctcgt gccttacaac accagcctcc gggcgccatt ataccaaaa gtctggcctg	600
taccatctca ccaacgactg cccaacagc agcatcgttt atgaggcgga gacactgatt	660
ttgcacttgc ctgggtgtgt acctgtgtgt aagrtgraca atcaatcccg gtgctgggtg	720
caggcctccc cgaccctggc agtgccgaac gcgtctacgc cagtcaccgg gttccgaaa	780
catgtggaca tcatggtggg cgctgccgcy ttctgttcag ctatgtatgt gggggacctg	840
tgcgggggcc ttttctcgt tggacagctc ttcacgctca ggccctcgat gcatcaggtt	900
gtccaggagt gtaactgttc catctacaca gggcatatca ctggacaccg aatggca	957

<210> 44  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (144)..(144)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (149)..(149)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (156)..(157)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE

<222> (161)..(161)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (167)..(167)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (171)..(172)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (174)..(174)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (232)..(233)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (177)..(177)  
<223> Xaa represents any amino acid

<400> 44

Met	Ser	Thr	Leu	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Ile
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
		35						40				45			

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Xaa  
130 135 140

Gly Gly Val Ala Xaa Ala Leu Ala His Gly Val Xaa Xaa Ile Glu Asp  
145 150 155 160

Xaa Val Asn Tyr Ala Thr Xaa Asn Leu Pro Xaa Xaa Ser Xaa Ser Ile  
165 170 175

Xaa Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ala  
180 185 190

His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu Pro  
210 215 220

Gly Cys Val Pro Cys Val Lys Xaa Xaa Asn Gln Ser Arg Cys Trp Val  
225 230 235 240

Gln Ala Ser Pro Thr Leu Ala Val Pro Asn Ala Ser Thr Pro Val Thr  
245 250 255

Gly Phe Arg Lys His Val Asp Ile Met Val Gly Ala Ala Ala Phe Cys  
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly



275

280

285

Gln Leu Phe Thr Leu Arg Pro Arg Met His Gln Val Val Gln Glu Cys  
 290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala  
 305 310 315

<210> 45  
 <211> 413  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (302)..(302)  
 <223> n represents nucleotide

<220>  
 <221> misc\_feature  
 <222> (340)..(340)  
 <223> n represents nucleotide

<220>  
 <221> misc\_feature  
 <222> (384)..(384)  
 <223> n represents nucleotide

<400> 45  
 atgagcacac ttcctaaacc tcaaagaaaa accaaacgaa acaccaaccg tcgcccacag 60  
 gacgtcaagt tcccgggtgg cggtcagatc gttggtggag ttacttgtt gccgcgcagg 120  
 ggccctcggt tgggtgtgcg cgcgacgagg aaaacttctg aacggtccca gccaggggt 180  
 agacgccaac ctataccgaa ggtgcgtcac caaacgggcc gtacctgggc tcaaccggg 240  
 taccctggc ctctttatgg gaatgagggt tgtggctggg cagggtggct cctgtcccc 300  
 cncggtctc gccctaattg gggcccta gacccccggn ggaggtcccg caacctgggt 360  
 aagggtcatcg atacccttac ttgnngsttc gccgacctca tagagtacat tcc 413

<210> 46  
<211> 137  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (101)..(101)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (114)..(114)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (128)..(129)  
<223> Xaa represents any amino acid

<400> 46

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Xaa Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro

100

105

110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa  
 115 120 125

Xaa Phe Ala Asp Leu Ile Glu Tyr Ile  
 130 135

<210> 47  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (324)..(324)  
 <223> n represents any nucleotide

<220>  
 <221> misc\_feature  
 <222> (340)..(340)  
 <223> n represents any nucleotide

<220>  
 <221> misc\_feature  
 <222> (455)..(455)  
 <223> n represents any nucleotide

<400> 47  
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acacaaaccg tcgccaatg 60  
 gatgtcaagt tcccgggcgg cggtcagatc gttggtggag tctacttggt accgcgcagg 120  
 ggcccacgtt tgggtgtgcg cgcgacgagg aagacttcgg aacggtccca ggccagaggt 180  
 aggcgccaac caatacccaa ggtgcgccag aaccaaggcc gaacctgggc tcagcctggg 240  
 tacccttggc ccctttatgg gaacgagggc tgcggctggg cggggtggct cttgtcccc 300  
 cgtggctctc gcccgactg gggncccaat gacccccggn ggaggtcccg caacctgggt 360  
 aaggtcatcg acaccctcac ttgcggcttc gccgacctca tggagtacat ccctgtcggt 420  
 ggcgcccccc ttggaggcgt tgcggcgga ctgnacatg gtgtcagggc catcgaggac 480

gggataaact atgcaacagg gaatcttcct ggttgctctt tctctatctt ccwcttggca 540  
 cttctctcgt gcctcaccac gcctgcctcc gcactaaact atgctaacaa gtctgggctg 600  
 tatcatctaa ccaatgactg cccaatagc agcatttgtt atgaggcgaa tggcatgac 660  
 ctgcatctcc cgggttgctg cccctgcgtg aagaccggca acctgaccaa gtgttggtg 720  
 tcggcctccc cgacattggc ggtgcagaat gcgtcgggtt ccatcagggg tgtccgcgag 780  
 cacgtggacc tcttggtggg tgctgctgctg ttctgctctg ccatgtacgt gggcgactta 840  
 tgcggtgggc tctttctcgt tgggcagttg ttcacgttca gaccaggat gtatgagac 900  
 gcccaggact gcaactgttc catctatgca ggccacatca ctgggcaccg gatggcg 957

<210> 48  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (108)..(108)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (114)..(114)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (152)..(152)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (178)..(178)  
 <223> Xaa represents any amino acid

<400> 48

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Ala Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asp Trp Xaa Pro Asn Asp Pro  
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Glu Tyr Ile Pro Val Val Gly Ala Pro Leu  
130 135 140

Gly Gly Val Ala Ala Glu Leu Xaa His Gly Val Arg Ala Ile Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Xaa Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu  
180 185 190

Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu Pro  
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Leu Thr Lys Cys Trp Leu

225	230	235	240
Ser Ala Ser Pro Thr Leu Ala Val Gln Asn Ala Ser Val Ser Ile Arg			
	245	250	255
Gly Val Arg Glu His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys			
	260	265	270
Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly			
	275	280	285
Gln Leu Phe Thr Phe Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp Cys			
	290	295	300
Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala			
305	310	315	

<210> 49  
 <211> 309  
 <212> DNA  
 <213> hepatitis C virus

<400> 49	
atgagcacac ttcttaaacc acaaagaaaa accaaaagaa acaccaaccc cggccacagg	60
acgttaagtt cccaggcggc ggtagatcg ttggtggagt ttacgtgcta ccacgcaggg	120
gccccagtt ggggtgtgct gcagtgcgca agacttccga gcggtcgcaa cctcgagta	180
ggcgccaacc catccccagg gcgcgccgaa ccgagggcag gtcctgggct cagccccggg	240
acccttgcc cctatatggg aatgagggct gcgggtgggc aggggtggctc ctgtccccgc	300
gcggctctc	309

<210> 50  
 <211> 115  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (17)..(17)  
 <223> Xaa represents any amino acid

<400> 50

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

/ Xaa Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Gln Leu Gly Val Arg Ala  
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Ser Arg Arg Gln Pro  
50 55 60

Ile Pro Arg Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg  
115

<210> 51

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 51

gacggaatta atttcgcaac aggggaattta cctgggttgct ctttctctat cttccttctg 60

gctttgttct catgcttgct tacaccaca gccgggctgg agtaccgtaa tgcctccgga 120

ctctacatgg taactaacga ctgcagtaac ggtagtatcg tgtatgaggc cggggatatt 180

atcctccact tacctggctg tgtcccctgc gtacgctctg gcaatacatc aagatgctgg 240

atccctgtga gcccyaccgt cgccgtgaag tcgccctgcg ccgccaccgc ctctctccgc 300  
acgcacgtgg atatgatggg ggggrgcggcc accctatgct cagctctcta cgtaggagac 360  
ctttgtggag cgctatttct tgytygggcag gggttctcat ggagacatcg ccagcattgg 420  
actgtccagg actgcaactg ttccatc 447

<210> 52  
<211> 149  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (82)..(85)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (108)..(108)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (128)..(128)  
<223> Xaa represents any amino acid

<400> 52

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser  
1 5 10 15

Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Leu Thr Pro Thr Ala Gly  
20 25 30

Leu Glu Tyr Arg Asn Ala Ser Gly Leu Tyr Met Val Thr Asn Asp Cys  
35 40 45

Ser Asn Gly Ser Ile Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu  
50 55 60



Pro Gly Cys Val Pro Cys Val Arg Ser Gly Asn Thr Ser Arg Cys Trp  
65 70 75 80

Ile Pro Val Ser Xaa Thr Val Ala Val Lys Ser Pro Cys Ala Ala Thr  
85 90 95

Ala Ser Leu Arg Thr His Val Asp Met Met Val Xaa Ala Ala Thr Leu  
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ala Leu Phe Leu Xaa  
115 120 125

Gly Gln Gly Phe Ser Trp Arg His Arg Gln His Trp Thr Val Gln Asp  
130 135 140

Cys Asn Cys Ser Ile  
145

<210> 53  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 53  
ctcgacagtt actgagaatg acatccgtgt cgaggaatca atataccaat gttgtgactt 60  
ggcccccgag gctcgcaagg ccataaagtc gtcacccgag cggctgtaca tcgggggccc 120  
yctaaccaat tcaaaaggac agaactgcgg ctaccgtcgg tgccgcgccca gcggcgtgct 180  
gactaccagc tgccggaaca ccctgacatg ctacttgaaa gccagagcgg cctgtcgagc 240  
tgcaaagctc cgggactgca ccatgctcgt gtgcggggat gaccttgtcg ttatctgtga 300  
gagtgcggga gtcgaggaag acgcggcgaa cctacgagct 340

<210> 54  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (40)..(40)  
<223> Xaa represents any amino acid

<400> 54

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Xaa Leu Thr Asn Ser Lys Gly Gln Asn  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala  
65 70 75 80

Ala Lys Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg  
100 105 110

Ala

<210> 55

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 55

ctcgacagtt actgagaacg acatccgtac cgaggratca atctatcaat gttgtgactt 60

ggccccygag gcccgcaagg ccataaagtc gctcaccgag cggctgtacg tcgggggccc 120

cctaaccaat tcaaaggggc agaactgcgg ctatcgtcgg tgtcgcgcta gcggcgtgct 180

gaccaccagc tgcggcaaca ccctcacatg ctacttgaaa gccagggcgg cctgtcgagc 240

tgcaaagctc caggactgca cgatgctcgt gtgcggagac gaccttgctg ttatctgtga 300  
gagcgcggga gtcgaggagg acgcggcgaa cctacgagtc 340

<210> 56  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (22)..(22)  
<223> Xaa represents any amino acid

<400> 56

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Xaa Ser Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Ala Xaa Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala  
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg  
100 105 110

Val

<210> 57  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 57  
ctcgacagtt actgagaacg acattcgtgt cgaggaatca atctaccagt gctgtgactt 60  
ggcccccgag gcccgcaagg ccataaagtc gtcaccgag cggctgtata tcgggggtcc 120  
cctaaccaac tcaaaagggc agaactgcgg ctaccgtcgg tgccgcgcca gcggcgtgct 180  
gactaccagc tgcggttaata ccctcacatg ttacttgaaa gccagggcgg cctgtcgagc 240  
tgcaagctc caggactgca caatgctcgt gtgcggagac gaccttgctg ttatctgtga 300  
gagtgcrgga gtcgaggagg atgcggcgaa cctacgagtc 340

<210> 58  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (102)..(102)  
<223> Xaa represents any amino acid

<400> 58

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala  
 65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Cys Glu Ser Xaa Gly Val Glu Glu Asp Ala Ala Asn Leu Arg  
 100 105 110

Val

<210> 59  
 <211> 652  
 <212> DNA  
 <213> hepatitis C virus

<220>  
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 <223> n represents any nucleotide

<400> 59  
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 tacaccggaa ttgccaggac gaccgggtcc tttcttgat caaccgctc aatgcctgga 120  
 gatttgggcg tgccccgca agactgctag ccgagtagtg ttgggtcgcg aaaggccttg 180  
 tgggtactgcc tgatagggtg cttgcgagt ccccgggagg tctcgtagac cgtgcaccat 240  
 gagcacgaat cctaaacctc aaagaaaaac caaaagaaac accaaccgcc gccacagga 300  
 cgtcaagttc ccgggcggtg gccagatcgt tgggtggagtc tacgtgctac cgcgcagggg 360

ccctagattg ggtgtgcgcg cagcgcggaa gacttcggag cggtcgcaac ctctgtgggag 420  
 gcgcacaacct attcccaagg agcgccgacc cgagggcagg tcctgggcgc agcccgggta 480  
 cccctggccc ctctatggta acgagggctg cgggtgggca ggtnggctcc tgtcccctcg 540  
 cggctcccggt cctagttggg gtcctactga cccccggcgt aggtcacgca atttgggtaa 600  
 ggtcatcgat accctcacgt gttgnttcgc cgacctcatg gggtacatac cg 652

<210> 60  
 <211> 138  
 <212> PRT  
 <213> hepatitis C virus

<220>  
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 <223> Xaa represents any amino acid

<220>  
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 <222> (129)..(129)  
 <223> Xaa represents any amino acid

<400> 60

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Ala Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Xaa  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Xaa Phe Ala Asp Leu Met Gly Tyr Ile Pro  
130 135

<210> 61  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 61  
ctcaacggtc actgaagctg atatccgaac agaggagtcc atataccaat gctgtgacct 60  
gcaccccgaa gcacgtgtag ccatcaagtc tttgactgaa aggctgtacg tcggggggcc 120  
cttgaccaat tcaaaagggg agaactgcgg ctatcgaga tgccgtgcca gcggcgctctt 180  
gacaaccagc tgcggcaaca ccctcacctg ctatatcaag gccctagcag cctgtagagc 240  
tgccaagctc caggactgca ccatgctcgt ctgtggcgac gacctggctg tgatctgcga 300  
gagtgtaggg acccaggagg atgcggcgag cctgcgagcc 340

<210> 62  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 62  
Ser Thr Val Thr Glu Ala Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15  
Cys Cys Asp Leu His Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Glu Asn  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Arg Ala  
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Val Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg  
100 105 110

Ala

<210> 63  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
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<223> n represents any nucleotide

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<222> (311)..(311)  
<223> n represents any nucleotide

<220>  
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<222> (316)..(316)  
<223> n represents any nucleotide

<220>  
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<222> (330)..(340)  
<223> n represents any nucleotide



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<400> 63
ntcaacagtc actgagagtg atatccgtac agaggagtcc atctaccaat gctgtgatct      60
agaccccgag gctcgcaagg ccataaggtc cctcacagag aggctttata tcgggggtcc      120
cctgacaaac tcaaaagggc agaactgcgg ctaccgccga tgccgtgcaa gcggcgctct      180
gacgactagc tgcggcaaca ccctcacctg ttacataaag gccagggcag cctgtcgagc      240
tgcggaagctc caggattgct caatgctcgt ctgtggcgac gaccttgtcg ttatctgcga      300
gatcgagggg ntccangagg atccgtcgan nnnnnnnnnn                               340

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<210> 64
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
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<222> (104)..(105)
<223> Xaa represents any amino acid

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<220>
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<223> Xaa represents any amino acid

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<400> 64

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Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1          5          10          15

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Cys Cys Asp Leu Asp Pro Glu Ala Arg Lys Ala Ile Arg Ser Leu Thr
20          25          30

```

```

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35          40          45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys

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50

55

60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala  
65 70 75 80

Ala Lys Leu Gln Asp Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ile Glu Gly Xaa Xaa Glu Asp Pro Ser Xaa Xaa Xaa  
100 105 110

Xaa

<210> 65  
<211> 831  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (779)..(779)  
<223> n represents any nucleotide

<400> 65  
cgtagaccgt gcaccatgag cacgaatcct aaacctcaaa gaaaaaccaa acgtaacatc 60  
aaccgccgcc cacaggacgt caagttcccg ggcggtggcc agatcgtcgg tggagtttac 120  
ctgttgccgc gcaggggccc tagattgggt gtgcgcgcga ctaggaagac ttccgagcgg 180  
tcgcaacctc gtgggaggcg acagcctatc cccaaggctc gccgatccga gggcaggtcc 240  
tgggctcagc ccgggtaccc ttggcccctc tatggcaatg agggcatggg ttgggcaggg 300  
tggctcctgt ccccccattg ctcccggcct agttggggcc cttcagacct ccggcgtagg 360  
tcgcgtaatt tgggtaaggt catcgatacc ctcacatgcg gcttcgccga cctcatgggg 420  
tacattccgc tcgtcggcgc ccccctaggg ggcgttgcca gggccctggc gcaaggcttc 480  
cgggatctac cacgtcacca acgattgttc caatgggagc attgtgtatg aggcggaagg 540  
catgatcatg catctccccg ggtgcgtgcc ctgcgttcgg gaaggtaata tctctcgttg 600  
ctgggtaccg ttttccccca cgctcgcagc caggaatgct agcgtcccca ctcaggcaat 660

tcggcgacac gtcgacttgc ttgttggggc ggccacactc tgttctgcta tgtatgtggg	720
ggacctctgt ggggtccgtct tctctgctcg ccaactgttc accttcacaw cccgccagna	780
ctacacagtg caagactgca attgttccat ctaccccggc catataacgg g	831

<210> 66  
 <211> 158  
 <212> PRT  
 <213> hepatitis C virus

<400> 66

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Ile Asn	1	5	10	15
Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly	20	25	30	
Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala	35	40	45	
Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro	50	55	60	
Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly	65	70	75	80
Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp	85	90	95	
Leu Leu Ser Pro His Gly Ser Arg Pro Ser Trp Gly Pro Ser Asp Pro	100	105	110	
Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys	115	120	125	
Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu	130	135	140	
Gly Gly Val Ala Arg Ala Leu Ala Gln Gly Phe Arg Asp Leu	145	150	155	

<210> 67  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
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<223> n represents any nucleotide

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<222> (334)..(340)  
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<400> 67  
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ggcccccgag gctcgcgtag ccataaagtc gctcactgag cggctatatg tcggggggccc 120  
tctcaccaac tcaaaaggac agaactgcgg ctatcgccgg tgccgtgcga gcggtgtgct 180  
gactactagc tgccggaaca ccctcacatg ctacctgaaa gccgccgcgg cctgtcgagc 240  
tgcaaagctc cggaatgca caatgctcgt gtgtggcgac gacctcgtcg ttatctgtga 300  
gagtgcgggg gtccaggagg atgctgcaag cctnnnnnnn 340

<210> 68  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
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<222> (1)..(2)  
<223> Xaa represents any amino acid

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<222> (12)..(12)  
<223> Xaa represents any amino acid

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 <222> (111)..(113)  
 <223> Xaa represents any amino acid

<400> 68

Xaa Xaa Val Thr Glu Ser Asp Ile Arg Val Glu Xaa Ser Ile Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala  
 65 70 75 80

Ala Lys Leu Arg Glu Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Xaa Xaa  
 100 105 110

Xaa

<210> 69  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (28)..(28)  
 <223> n represents any nucleotide

<220>  
 <221> misc\_feature  
 <222> (336)..(340)  
 <223> n represents any nucleotide

<400> 69  
 ctgcacagtc acagagagag atataagnac tgaggagtcc atataccagg cttgttcctt 60  
 acccgagcag gccagaactg ccatacactc attgactgag agactctacg taggagggcc 120  
 catgatgaac agcaaagggc aatcctgcgg atacaggcat tgccgcgcca gcggagtgct 180  
 caccaccagt atggggaata ccatcacgtg ctacatcaag gccctagcgg cttgtaaagc 240  
 agcaggaata gtggcccca ccatgctggt gtgcggcgat gacctagttg tcatctcaga 300  
 gagtcaggga gtcgaggagg acgaccggaa cctgannnnn 340

<210> 70  
 <211> 113  
 <212> PRT  
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<220>  
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 <223> Xaa represents any amino acid

<220>  
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 <222> (112)..(113)  
 <223> Xaa represents any amino acid

<400> 70  
 Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu Glu Ser Ile Tyr Gln  
 1 5 10 15  
 Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser  
 35 40 45

Cys Gly Tyr Arg His Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met  
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala  
 65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ser Glu Ser Gln Gly Val Glu Glu Asp Asp Arg Asn Leu Xaa  
 100 105 110

Xaa

<210> 71  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 71  
 ctcaaccgtc acagagaggg atataagaac tgaggagtcc atatacctgg cctgctcctt 60  
 acccgagcag gcccggactg ccatacattc attaactgag agactttacg tgggagggcc 120  
 catgatgaac agcaaagggc agtcctgcgg atacaggcgt tgccgcgcta gcggagtgct 180  
 caccaccagt atggggaaca ccatcacgtg ttatgtgaaa gccctcgcag cttgtaaagc 240  
 tgcgggcatt gttgccccca cgatgctggt gtgcggcgat gacctggttg tcatctcaga 300  
 gagtcagggg gctgaggagg acgagcgaaa cctgagagtc 340

<210> 72  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 72

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu  
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met  
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala  
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Gln Gly Ala Glu Glu Asp Glu Arg Asn Leu Arg  
100 105 110

Val

<210> 73

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 73

ctcaacagtc gcggagagag acatcaggac cgaggagtcc atttaccttg cctgctcctt 60  
acccgagcaa gcccgaactg ccatacattc attgactgag agactttacg taggagggcc 120  
catgatgaac agcaagggac agtcctgcgg ttacagacgt tgccgcgcca gcggagtgtc 180  
caccaccagc atggggaata ccatcacatg ctatgtgaag gcattagctg cctgcaaagc 240  
tgcaggcatc gttgctccca cgatgctggg ttgtggcgac gatctggtca tcatctcaga 300  
gagtcaggga accgaggagg atgagcggaa cctgagagtc 340



<210> 74  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 74

Ser Thr Val Ala Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu  
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met  
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala  
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Ile Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg  
100 105 110

Val

<210> 75  
<211> 1195  
<212> DNA  
<213> hepatitis C virus

<220>  
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<223> n represents any nucleotide

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<223> n represents any nucleotide

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<223> n represents any nucleotide

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<222> (1194)..(1194)  
 <223> n represents any nucleotide

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<400> 75  
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 catttgggcg tgccccgca agactgctar ccgagtagcg ttgggttgcg aaaggccttg 180  
 tgggtactgcc tgataggggtg cttgcgagtg ccccgggagg tctcgtagac cgtgcatcat 240  
 gagcacaat cctaaacctc aaagaaaaac caaaagaaac actaaccgcc gccacagga 300  
 cgttaagttc ccgggcggtg gccagatcgt tggcgaggta tacttggtgc cntgcagggg 360  
 ncccggtng ngtnatgcg caacgangaa gactnccgaa cagtcccagc cacgtgggag 420  
 gcgccagccc atcccgaaag atcgngcac cactggcaag tcctggggac gtccaggata 480  
 tccttgcccc ctgtatggga acgagggcct cgggtgggca ggggtggctcc tgtcccccg 540  
 gggctccgc ccgtcatggg gcccacagga ccccggcac aggtcgcgca acttgggtaa 600  
 ggtcatcgat accctcacgt ncggctttnc cgacctcatg gggtagattc ccgtcggttg 660  
 cgccccagta ggnggcgtcg ccagagctct cgcgcatggc gtgagagtcc tggaggacgg 720  
 gataaactat gaaacaggga acctccccgg ttgtcttttc tctatctccc tccttgctct 780  
 tctgtcctga attaccngc cagtttctgc tgtggaaatc aaaaacacca gmaacacata 840  
 catggtgact aacgactgtt caaacagyag catcacctgg cagcttnngn ncgcggtgct 900  
 tcacgttcct ggatgcgtcc cctgtgaacg agagggcaac agttcccggg gctggattcc 960  
 agtcacgccc racgtakncg tgagccgacc tgggtgccct accgaggggt tgcgatcgca 1020  
 catcgacacc atcgtagcgt ccgcaacatt ttgttctgcc ctctacatag gggatgtatg 1080  
 tggcgcgata atgatagctg cccaagtggg catcgtctcg ccggagcatc atcactttgt 1140  
 ccaggactgt aactgttcca tctaccggg ccacataacg gggcctcgta tgtng 1195

<210> 76  
<211> 318  
<212> PRT  
<213> hepatitis C virus

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<223> Xaa represents any amino acid

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<222> (197)..(197)  
<223> Xaa represents any amino acid

<220>  
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<222> (244)..(244)  
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<223> Xaa represents any amino acid

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<221> MISC\_FEATURE

<222> (318)..(318)

<223> Xaa represents any amino acid

<400> 76

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Xaa Cys Arg Xaa Pro Arg Xaa Xaa Xaa Cys Ala  
35 40 45

Thr Xaa Lys Thr Xaa Glu Gln Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Asp Arg Xaa Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa  
115 120 125

Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val  
130 135 140

Xaa Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Glu Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile

165										170					175						
Ser	Leu	Leu	Ala	Leu	Leu	Ser	Ile	Thr	Xaa	Pro	Val	Ser	Ala	Val	Glu						
			180						185				190								
Ile	Lys	Asn	Thr	Xaa	Asn	Thr	Tyr	Met	Val	Thr	Asn	Asp	Cys	Ser	Asn						
		195					200					205									
Xaa	Ser	Ile	Thr	Trp	Gln	Leu	Xaa	Xaa	Ala	Val	Leu	His	Val	Pro	Gly						
	210					215					220										
Cys	Val	Pro	Cys	Glu	Arg	Glu	Gly	Asn	Ser	Ser	Arg	Cys	Trp	Ile	Pro						
225					230					235					240						
Val	Thr	Pro	Xaa	Val	Xaa	Val	Ser	Arg	Pro	Gly	Ala	Leu	Thr	Glu	Gly						
			245						250					255							
Leu	Arg	Ser	His	Ile	Asp	Thr	Ile	Val	Ala	Ser	Ala	Thr	Phe	Cys	Ser						
			260					265					270								
Ala	Leu	Tyr	Ile	Gly	Asp	Val	Cys	Gly	Ala	Ile	Met	Ile	Ala	Ala	Gln						
	275						280					285									
Val	Val	Ile	Val	Ser	Pro	Glu	His	His	His	Phe	Val	Gln	Asp	Cys	Asn						
	290					295					300										
Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr	Gly	Pro	Arg	Met	Xaa								
305					310					315											

<210> 77  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 77	
atccacagtc actgaaagag acatcagagt tgaagagtcc gtttatctgt cctgttcact	60
tcccgaggag gcccgagctg ccatacactc actaactgag aggctgtacg tgggaggtcc	120
catgcagaac agcaaggggc aatcctgcgg atacaggcgc tgccgcgcca gcggggtgct	180
caccactagc atggggaata ctctcacatg ctacttgaag gcccgaggcg cctgcagggc	240



cgcggggcatt gttgcaccca caatgctggt gtgtggcgac gacctgggtcg tcattctcaga 300

gagtcagggg actgagaggg acgagaacaa cctgagacct 340

<210> 78  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 78

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Ser Val Tyr Leu  
1 5 10 15

Ser Cys Ser Leu Pro Glu Glu Ala Arg Ala Ala Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Gln Asn Ser Lys Gly Gln Ser  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala  
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Arg Asp Glu Asn Asn Leu Arg  
100 105 110

Pro

<210> 79  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 79  
 ctcaacagtc acggagaggg acatcaggaa tgaggagtcc atattcctgg cctgctcggt 60  
 gcccgaggag gcccggaactg tcatacatte gctcactgag agactctaca taggcggggcc 120  
 gatgatgaac agcaaaggcc agtcctgtgg atacaggcgt tgtcgcgccca gcggggtggt 180  
 caccactagc atgggcaata ccatcacgtg ctatgtgaaa gccatggcag cttgcagagc 240  
 tgccgggatt gacgccccca caatgttggt atgtggcgac gacctggtgg tcatctcaga 300  
 gagtcagggg accgaggagg acgagcgaaa tctgagagtc 340

<210> 80  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 80

Ser	Thr	Val	Thr	Glu	Arg	Asp	Ile	Arg	Asn	Glu	Glu	Ser	Ile	Phe	Leu
1				5					10					15	
Ala	Cys	Ser	Leu	Pro	Glu	Glu	Ala	Arg	Thr	Val	Ile	His	Ser	Leu	Thr
			20					25					30		
Glu	Arg	Leu	Tyr	Ile	Gly	Gly	Pro	Met	Met	Asn	Ser	Lys	Gly	Gln	Ser
		35					40					45			
Cys	Gly	Tyr	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Met
	50					55					60				
Gly	Asn	Thr	Ile	Thr	Cys	Tyr	Val	Lys	Ala	Met	Ala	Ala	Cys	Arg	Ala
65					70					75				80	
Ala	Gly	Ile	Asp	Ala	Pro	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
			85					90						95	
Val	Ile	Ser	Glu	Ser	Gln	Gly	Thr	Glu	Glu	Asp	Glu	Arg	Asn	Leu	Arg
		100						105					110		
Val															

<210> 81  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 81  
 ctcttgactc tactgtcact gaacaggata tcagggtaga agaagaaata taccaatggt 60  
 gtgaccttga gccggaggct agacgggcaa tcaaatcgct cacggaacgg ctttacgttg 120  
 gaggtcccat gttcaacagc aaggggctca aatgcggata tcgccgttgc cgtgctagcg 180  
 gtgtattgcc cactagctac ggtaatacaa tcacctgcta catcaaggcc agagcggctg 240  
 ctcgagctgc gggccttcaa gacccatcat tccttgtctg cggagatgat ttggtggtag 300  
 tggctgagag ttgcgkcggt gatgaggagg atagggcagc 340

<210> 82  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (103)..(103)  
 <223> Xaa represents any amino acid

<400> 82

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Lys Ser Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Leu Lys  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Tyr  
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Arg Ala Ala Ala Arg Ala  
 65 70 75 80

Ala Gly Leu Gln Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Val Ala Glu Ser Cys Xaa Val Asp Glu Glu Asp Arg Ala Ala Leu  
 100 105 110

Arg

<210> 83  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (336)..(336)  
 <223> n represents any nucleotide

<400> 83  
 ctccactgta accgaaaagg acatcaggcc cgaggaagag gtctatcagt gttgtgacct 60  
 ggagcccgaa gctcgcaagg ttattaccgc cctcacagaa agactctacg tgggcggccc 120  
 catgcacaac agcaagggag acctttgtgg gtatcggaga tgccgcgcaa gcggcgtcta 180  
 caccaccagc ttcggaaaca cactgacgtg ctacctcaaa gcctcagctg ctattagagc 240  
 ggcagggctg agagactgca ccatgctggt ttgcggtgac gacttggtcg tcatcgctga 300  
 gagcgatggc gtagaggagg ataaccgagc cctccnagcc 340

<210> 84  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (112)..(112)  
 <223> Xaa represents any amino acid

<220>  
 <221> misc\_feature  
 <223> Xaa represents any amino acid

<400> 84

Ser Thr Val Thr Glu Lys Asp Ile Arg Pro Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
 65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Asn Arg Ala Leu Xaa  
 100 105 110

Ala

<210> 85  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 85  
 ctccacggtg actgaaaagg acatcagggt cgaggaagag atctatcaat gttgtgacct 60

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ggarcccgaa gcccgcaaag caatatccgc cctcacagag agrctctact tgggcggccc      120
catgtataac agcaaagggg agctctgcgg gtatcggagg tgccgcgcga gcggagtgta      180
caccacaagt ttcgggaaca cagtgcctg ctatcttaag gccaccgcag ctaccagggc      240
tgcaggccta aaagactgca ccatgctggt ctgcggtgac gacttggtcg tcatcgccga      300
gagcgagggc gtagaggagg attcccaacc cctccgagcc      340

```

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<210> 86
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (34)..(34)
<223> Xaa represents any amino acid

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<400> 86

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```

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1          5          10          15

```

```

Cys Cys Asp Leu Xaa Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
          20          25          30

```

```

Glu Xaa Leu Tyr Leu Gly Gly Pro Met Tyr Asn Ser Lys Gly Glu Leu
          35          40          45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
          50          55          60

```

```

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65          70          75          80

```

```

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val

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85

90

95

Val Ile Ala Glu Ser Glu Gly Val Glu Glu Asp Ser Gln Pro Leu Arg  
 100 105 110

Ala

<210> 87  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 87  
 ctccaccgta accgaaaggg acatcagggg cgaggaggag gtctatcagt gttgtgatct 60  
 ggagccagag gcccgcaagg caatatccgc cctcacggag agactctatg tgggcgggtcc 120  
 catgtttaac agcaaggagg acctatgtgg ctaccgcagg tgccgcgcaa gcggcgtcta 180  
 caccaccagc ttcggaaaca cactgacctg ctacctcaag gccacggccg ctaccagagc 240  
 ggccggcctg aaggattgca caatgctggg ttgcggggac gacctgggtcg tcatcgcaga 300  
 gagcgatggc gtggacgagg accgccgagc cctccaagct 340

<210> 88  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

&lt;400&gt; 88

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Asp Glu Asp Arg Arg Ala Leu Gln  
100 105 110

Ala

<210> 89  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (111)..(111)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (126)..(126)  
<223> n represents any nucleotide

<400> 89  
ctcaacagtc acagagcgcg atgtccagac ggagcatgac atctaccagt gctgtaagtt 60  
ggagcccgcg gcacggacag ccatcacatc gcttactgac cgattgtact ncggtgggtcc 120  
catgtntaac tctaaaggtc aggcatgtgg ataccgtagg tgcagggcca gtggcgtctt 180  
gaccaccatc ctggccaata ctctgacttg ctacttgaaa gctcaggcgg catgcagagc 240  
tgccgggctg aaggactttg acatgttggg ctgcggagac gaccttgtcg ttatttcgga 300  
gagtttgggg gtctcggagg acactagtgc actgcgagct 340



<210> 90  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (37)..(37)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (42)..(42)  
<223> Xaa represents any amino acid

<400> 90

Ser Thr Val Thr Glu Arg Asp Val Gln Thr Glu His Asp Ile Tyr Gln  
1 5 10 15

Cys Cys Lys Leu Glu Pro Ala Ala Arg Thr Ala Ile Thr Ser Leu Thr  
20 25 30

Asp Arg Leu Tyr Xaa Gly Gly Pro Met Xaa Asn Ser Lys Gly Gln Ala  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ile Leu  
50 55 60

Ala Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala  
65 70 75 80

Ala Gly Leu Lys Asp Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Leu Gly Val Ser Glu Asp Thr Ser Ala Leu Arg  
100 105 110

Ala

<210> 91  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 91  
ctcgacagtc accgagcgcg acatccrcac cgagcacgac atctaccaat gctgccaaact 60  
tgacccggtg gcacgcaagg ctattacatc tctgactgag cggctgtact gcggwggggcc 120  
catgatgaac tcccgtggtc aatcatgtgg ataccgtagg tgccgagcca gtggcgtgct 180  
caccacgagc ttgggcaata ccctaacatg ctatttgaaa gcacaagcag cgtgtagggc 240  
agcaaagctc aaaaactatg acatgttagt ctgcggagac gatctagtcg ttatcgcgga 300  
gagtggagga gtctctgagg atgttgacgc cctgcgagca 340

<210> 92  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (9)..(9)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (38)..(38)  
<223> Xaa represents any amino acid

<400> 92  
Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu His Asp Ile Tyr Gln  
1 5 10 15  
Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr  
20 25 30  
Glu Arg Leu Tyr Cys Xaa Gly Pro Met Met Asn Ser Arg Gly Gln Ser

35                                      40                                      45  
 Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Leu  
     50                                      55                                      60  
 Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala  
     65                                      70                                      75                                      80  
 Ala Lys Leu Lys Asn Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val  
                                     85                                      90                                      95  
 Val Ile Ala Glu Ser Gly Gly Val Ser Glu Asp Val Asp Ala Leu Arg  
                                     100                                      105                                      110

Ala

<210> 93  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 93  
 ctctctccgtc acggagcgtg acatccgcac tgaacacgac atctatcagt gctgcccaatt 60  
 agatccggta gcacggaaag ccattacatc tcttactgag cggctgtact gcggcgcccc 120  
 catgtacaac tctcgaggtc agtcatgtgg gtaccgcagg tgccgggcta gtggtgtctt 180  
 caccacaagc ttgggcaaca ccatgacatg ctacctgaag gctcaggcgg cttgtagggc 240  
 agcraagctc aaaaactttg acatgttggt ctgcggagac gacctagtcg ttattgctga 300  
 gagcggagga gtccttgagg atgccggggc cctgcgagtc 340

<210> 94  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (81)..(81)  
 <223> Xaa represents any amino acid

<400> 94

Ser Ser Val Thr Glu Arg Asp Ile Arg Thr Glu His Asp Ile Tyr Gln  
1 5 10 15

Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Arg Gly Gln Ser  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala  
65 70 75 80

Xaa Lys Leu Lys Asn Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Pro Glu Asp Ala Gly Ala Leu Arg  
100 105 110

Val

<210> 95

<211> 340

<212> DNA

<213> hepatitis C virus

<220>

<221> misc\_feature

<222> (36)..(36)

<223> n represents any nucleotide

<400> 95

atccacagtc acggggcgcg acatacgcac agaacnagac atttacctgt cctgccagct

60

cgacccagag gcccggaag ccataaagtc tctcactgag aggtctctatg tcggggggccc 120  
 tatgtacaac tcaaagggcc aactctgtgg tcaacgccga tgccgagcaa gcggagtact 180  
 cccacaagc atgggtaaca ccatcacatg cttcctgaag gcaaccgccg cttgccgagc 240  
 agccggcttt acagattatg acatgttggg ctgcgagagac gatttggttg tcgtaactga 300  
 gagtgtgga gtcaacgagg atatcgctaa cctgcgagcc 340

<210> 96  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus  
 <220>  
 <221> MISC\_FEATURE  
 <222> (12)..(12)  
 <223> Xaa represents any amino acid

<400> 96

Ser Thr Val Thr Gly Arg Asp Ile Arg Thr Glu Xaa Asp Ile Tyr Leu  
 1 5 10 15

Ser Cys Gln Leu Asp Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Leu  
 35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Met  
 50 55 60

Gly Asn Thr Ile Thr Cys Phe Leu Lys Ala Thr Ala Ala Cys Arg Ala  
 65 70 75 80

Ala Gly Phe Thr Asp Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Val Thr Glu Ser Ala Gly Val Asn Glu Asp Ile Ala Asn Leu Arg  
 100 105 110

Ala

<210> 97  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 97  
ctccactgtc actgagcagg acatcagggg agaactttcc atctttcagg cctgtgacct 60  
caaggacgag gctaggaggg tgataacttc actcacggag cggctttact gtggtggtcc 120  
tatgttcaac agcaagggaac aacactgcgg ttaccgccgc tgccgtgcta gtggggtgct 180  
accaccagc ttcgggaaca caatcacctg ttacatcaaa gcaaaggcag ctaccaaagc 240  
tgccggaatt aaaaatccat cattccttgt ctgcggagat gacttggtcg tgattgctga 300  
gagtgcaggg atcgatgagg acaagagcgc cttgagagct 340

<210> 98  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 98

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Leu Ser Ile Phe Gln  
1 5 10 15

Ala Cys Asp Leu Lys Asp Glu Ala Arg Arg Val Ile Thr Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Gln His  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe  
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Thr Lys Ala  
65 70 75 80

Ala Gly Ile Lys Asn Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Ala Gly Ile Asp Glu Asp Lys Ser Ala Leu Arg  
100 105 110

Ala

<210> 99  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 99  
ctctaccgtc acagagaggg acatacggac agaagaatcc atctatctgt cttgtcaatt 60  
gcctgaagag gcccggaag ccattaaatc gctgacagag agactatacg tgggcggccc 120  
gatggaaaac agcaagggcc aggcttgagg atataggcgt tgccgcgcaa gcgggggtatt 180  
caccacaagc ttggggaaca ccatgacttg ttacatcaaa gctaaagcgg cttgttaaagc 240  
cgctggcatt gtagaccggg tgatgctcgt gtgcggtgac gacctagtgg tcatctcaga 300  
aagcaagggg gtggaggagg accagcggga cctacgagtc 340

<210> 100  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 100

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu  
1 5 10 15

Ser Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala

35	40	45
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu		
50	55	60
Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala		
65	70	75 80
Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val		
85	90	95
Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg		
100	105	110

Val

<210> 101  
 <211> 335  
 <212> DNA  
 <213> hepatitis C virus

<400> 101	
ctccactgtc actgagagag acatacggac agaagaatcc atctayytgg cttgtcaatt	60
gcccgaagag gcccggaagg ccattaaatc actgacagag agactatacg tgggcggccc	120
gatggaaaac agcaaaggcc aggcctgcgg atataggcgt tgccgcgcaa gcgggggtatt	180
caccacaagc ttggggaaca ccatgacttg ttacatcaag gccaaargcag cttgtaaagc	240
ygctggcatt gttgacccgg tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga	300
gagcaagggg gtagaggagg accagcgaga cctac	335

<210> 102  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (15)..(16)  
 <223> Xaa represents any amino acid



<220>  
 <221> MISC\_FEATURE  
 <222> (75)..(75)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (80)..(80)  
 <223> Xaa represents any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (112)..(113)  
 <223> Xaa represents any amino acid

<400> 102

Ser	Thr	Val	Thr	Glu	Arg	Asp	Ile	Arg	Thr	Glu	Glu	Ser	Ile	Xaa	Xaa
1				5					10					15	

Ala	Cys	Gln	Leu	Pro	Glu	Glu	Ala	Arg	Lys	Ala	Ile	Lys	Ser	Leu	Thr
			20					25					30		

Glu	Arg	Leu	Tyr	Val	Gly	Gly	Pro	Met	Glu	Asn	Ser	Lys	Gly	Gln	Ala
		35					40					45			

Cys	Gly	Tyr	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Leu
	50					55					60				

Gly	Asn	Thr	Met	Thr	Cys	Tyr	Ile	Lys	Ala	Xaa	Ala	Ala	Cys	Lys	Xaa
65					70					75				80	

Ala	Gly	Ile	Val	Asp	Pro	Val	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
				85					90					95	

Val	Ile	Ser	Glu	Ser	Lys	Gly	Val	Glu	Glu	Asp	Gln	Arg	Asp	Leu	Xaa
			100					105					110		

Xaa

<210> 103  
 <211> 461  
 <212> DNA  
 <213> hepatitis C virus

<400> 103  
 cgtacagcct ccaggacccc ccctcccgga agagccatag tggctctgcgg aaccgggtgag 60  
 tacaccggaa ttgccgggaa gactgggtcc tttcttggat taaccactc tatgcccgga 120  
 gatttgggag tgcccccgca agactgctag ccgagtagcg ttgggttgcg aaaggccttg 180  
 tgggtactgcc tgataggggtg cttgcgagtg ccccgaggag tctcgtagac cgtgcaccat 240  
 gagcacgaat cctaaacctc aaagacaaac caaaagaaac accaaccgcc gccacagga 300  
 cgtaaagttc ccgggcggtg gccagatcgt tggcggggtg tacttggtgc cgcgcagggg 360  
 cccagagtg ggtgtgcgag cgacgagaaa gacctcggag cgggtcccagc cgcgtgggag 420  
 gcgccaacct atccccaagg ttaggcgcac caccggccgt t 461

<210> 104  
 <211> 74  
 <212> PRT  
 <213> hepatitis C virus

<400> 104

Met Ser Thr Asn Pro Lys Pro Gln Arg Gln Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Val Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Val Arg Arg Thr Thr Gly Arg  
65 70

<210> 105  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (338)..(338)  
<223> n represents any nucleotide

<400> 105  
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gatggaaaac agcaagggcc aggcctgcgg atacaggcgt tgccgcgcaa gcgggggtatt 180  
caccacaagc ttggggaaca ccatgacttg ttacatcaaa gccaaaggcg cttgtaaagc 240  
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<210> 106  
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<223> Xaa represents any amino acid

<220>  
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<400> 106

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20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala  
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg  
100 105 110

Xaa

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<213> hepatitis C virus

<400> 107

Ala Arg Gln Ser Asp Gly Arg Ser Trp Ala Gln  
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<213> hepatitis C virus

<400> 108

Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln  
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<213> hepatitis C virus

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Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln  
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<400> 110

Ala Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln  
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<213> hepatitis C virus

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Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg  
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<210> 112

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 112

Asp Arg Arg Ala Thr Gly Arg Ser Trp Gly Arg  
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<211> 11

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<400> 113

Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg  
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<211> 11

<212> PRT

<213> hepatitis C virus

<400> 114

Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln  
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<210> 115

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 115

Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln  
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<210> 116

<211> 11  
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<400> 116

Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln  
1 5 10

<210> 117  
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<400> 117

Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln  
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<210> 118  
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<400> 119

Val Arg Arg Thr Thr Gly Arg Thr Trp Ala Gln  
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<211> 12

<212> PRT

<213> hepatitis C virus

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His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val  
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<210> 121

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 121

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu  
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<210> 122

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 122

Tyr Glu Val His Ser Thr Thr Asp Gly Tyr His Val  
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<210> 123

<211> 12

<212> PRT



<213> hepatitis C virus

<400> 123

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<211> 12

<212> PRT

<213> hepatitis C virus

<400> 124

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Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val  
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Val Glu Ile Lys Asn Thr Ser Asn Thr Tyr Val Leu  
1 5 10

<210> 130  
<211> 12  
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<400> 130

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val  
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<210> 131

<211> 12

<212> PRT

<213> hepatitis C virus

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Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val  
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<211> 12

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<400> 132

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile  
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<213> hepatitis C virus

<400> 133

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val  
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Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val  
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Ile Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu  
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Ala His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu  
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Leu Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu  
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<400> 141

Val Tyr Glu Ala Lys Asp Ile Ile Leu His Thr

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Val Trp Gln Leu Arg Asp Ala Val Leu His Val  
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Ile Trp Gln Met Gln Gly Ala Val Leu His Val  
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Val Tyr Glu Ala Asp His His Ile Leu His Leu  
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<400> 152

Val Phe Glu Glu Thr Met Ile Leu His Leu  
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Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu  
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Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu  
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Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu  
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Ile Arg Glu Gly Asn Ile Ser Arg Cys Trp Val Leu Pro  
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<400> 159

Glu Asn Ser Ser Gly Arg Phe His Cys Trp Ile Pro Ile  
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<400> 161

Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp Ile Pro Val  
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Glu Arg His Gln Asn Gln Ser Arg Cys Trp Ile Pro Val  
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<400> 163

Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp Ile Pro Val  
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Val Gln Asn Ala Ser Val Ser Ile Arg Gly

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Ala Pro Lys Arg His Tyr Phe Val Gln Glu  
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Ser Pro Gln Tyr His Thr Phe Val Gln Glu  
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Ser Pro Gln His His Asn Phe Ser Gln Asp  
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Ser Pro Glu His His His Phe Val Gln Asp  
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<400> 199

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Arg Pro Arg Arg His Trp Thr Ala Gln Asp  
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Gln Pro Arg Arg His Trp Thr Thr Gln Asp  
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Gln Pro Arg Arg His Trp Thr Val Gln Asp  
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tccttagtc ccaccgtagc cgccagggat tcgcgcgtcc ccgtcagtga ggttcggcgt	780
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acgcaagact gcaattgctc catctaccca ggccatgtga caggatcatcg aatggct 957

<210> 211  
<211> 957  
<212> DNA  
<213> hepatitis C virus

<400> 211  
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ggccccaggt tgggtgtgcg cgcgacaagg aagacttcgg agcgggtcca gccacgtgga 180  
aggcgccagc ccatccctaa ggatcggcgc tccactggca aatcctgggg aaaaccagga 240  
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cgaggttccc gtccctcttg gggcccaat gacccccggc ataggtccc caacgtgggt 360  
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ccggtctcac cgaatgtggc cgtgcagcag cccggcgccc tcacgcaggg cttacggacg 780  
cacattgaca tggttgtgat gtccgccacg ctctgctccg ctctttacgt gggggacctc 840  
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gtgcaagact gcaattgctc catctaccct ggtaccatca ctggacaccg catggcg 957

<210> 212  
<211> 957  
<212> DNA  
<213> hepatitis C virus

<400> 212  
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ggccccaggt tgggtgtgcg cgcgacaagg aagacttctg agcgatccca gccgcgtgga	180
cgacgccagc ccatcccgaa agatcggcgc tccaccggca agtcctgggg aaagccagga	240
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cgcgggtctc gtcctacttg gggccccacc gacccccggc atagatcacg caatttgggc	360
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<210> 213  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 213	
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ggcccagat tgggtgtgcg cgcgacgagg aaaacttccg aacggtccca gccacgtggg	180
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tacccttggc ccctgtatgg gaatgagggc ctcggtcggg cagggtggct cctgtcccc	300
cgcggttctc gcccttcatt gggccccacc gacccccggc ataaatcgcg caacttgggt	360
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ccggttgccc ccaatctcgc cataagtcaa cctggcgctc tactaaggg cctgcgagca	780
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tgtggcgcg c tgatgctggc cgctcaggtc gtcgtcgtgt cgccacaaca ccatacgttt	900
gtccaggaat gcaactgttc catatacccg ggccgcatta cgggacaccg catggct	957

<210> 214  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 214	
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ggcccccggt tgggtgtgcg cgcgacgagg aaaacttccg agcgggtcca gccacgtggg	180
aggcgccagc ccaccccaa agatcggcgc cccactggca agtcctgggg aaaaccagga	240
tacccttggc ccctgtacgg gaatgagggc ctcggctggg cagggtggct cctgtcccc	300
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catattgata ccacattgc atccgctacg ttttgctctg ccctgtacat aggagacctg	840
tgtggcgcgg tgatgttggc ttctcaagtc ttcacatct cgccccagca tcataagttt	900

gtccaggact gcaactgttc catataccca ggccacatca ctggacatcg gatggcg 957

<210> 215  
<211> 957  
<212> DNA  
<213> hepatitis C virus

<400> 215  
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ggcccacgat tgggtgtgcg cgcgacgcgt aaaacttctg aacggtcaca gcctcgcgga 180  
cgacgacagc ctatccccaa ggcgcgctcg agcgaaggcc ggtcctgggc tcagcccggg 240  
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catgtggacc tattagtagg cgcggccacg atgtgctctg cgctctacgt gggatgatatg 840  
tgtggggctg tctttctcgt gggacaagcc ttcacgttca gacctcgacg ccatcaaacg 900  
gtccagacct gtaactgctc gctgtaccca ggccatcttt caggacatcg aatggct 957

<210> 216  
<211> 957  
<212> DNA  
<213> hepatitis C virus

<400> 216

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cgtggttctc	gccctagttg	gggcccaa	gacccccggc	gtagatcccg	caactttggt	360
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<210> 217  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 217	
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cggcggcagc	ctatcccca ggcgcgctcg ggcgagggac ggtcctgggc tgagcccggg 240
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cgcggttctc	ggccgagctg ggcccaa
aaggtcatcg	atacccttac atgcgggttc gccgacctca tggggtacat tccgctcgtc 420

ggcgcccccg	tggggggcgt	tgcaagggcc	ctcgcgcatg	gcgtgagggc	tcttgaggac	480
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tgcggggcag	ttttctcgt	aggacaagca	ttcacattca	gaccccgacg	ccaccagaca	900
gttcagcatt	gcaactgctc	actgtaccca	ggtcatgttt	caggtcatcg	gatggct	957

<210> 218  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 218	
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ggcccaagat	tgggtgtgcg cgcagttcgt aaaacttccg agcggtcaga accccgcaac 180
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<210> 219  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 219	
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ggcccacgat tgggtgtgcg cgcaactcgt aagacttcag agcggtcaca accccgcgga	180
cggcgacagc ctattcccaa ggcacgcccg agcggaggac ggtcctgggc gcagcctggg	240
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gtccagacct gcaactgctc gttgtacca ggccatatca caggacatcg catggca	957

<210> 220  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus



&lt;400&gt; 220

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&lt;210&gt; 221

&lt;211&gt; 957

&lt;212&gt; DNA

&lt;213&gt; hepatitis C virus

&lt;400&gt; 221

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 tgcgagggtg ccttctgat ggggcagatg atcacttttc ggccgctcg ccactggacc 900  
 acgcaggagt gcaattgttc catctacact ggccatatca ccggccacag gatggcg 957

<210> 222  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

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tgtggaggcg tcttcctagt gggccagctg ttcgacttcc gaccgcgccg gcactggacc 900  
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<210> 223  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 223  
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 ggccccagggt tgggtgtgcg cgcgactagg aagacttcgg agcggtcgca acctcgtggg 180  
 agacgtcagc ctatcccca ggcacgtcga tctgagggaa ggtcctgggc tcagcccggg 240  
 taccatggc ctctttacgg taatgagggt tgcgggtggg cgggatggct cctgtcacct 300  
 cgtggctctc gaccgtcttg gggcccaaat gatccccggc gaaggctccg caacttgggt 360  
 aaggctcatc ataccctaac ctgcggcttt gccgacctca tgggatacat cccgctcgta 420  
 ggcgcccccg tgggtggcgt cgccagggcc ctggcacacg gtgttagggc tgtggaggac 480  
 gggatcaatt atgcgacagg gaatcttccc ggttgctctt tctctatctt cttcttggca 540  
 cttctttcgt gcctgactgt tcccacctcg gccgtcaact atcgcaatgc ctcgggcatc 600  
 tatcacatca ccaatgactg cccgaactcg agcatagtgt acgagaccga gcaccacatc 660  
 ctacacctcc cagggtgttt accctgcgtg aggggtggga atcagtcacg ctgctgggtg 720  
 gccctcactc ccaccgtggc ggcgccttac atcggcgctc cgcttgaatc cctccggagt 780  
 catgtggatc tgatggtagg tgccgctact gcgtgctccg ctctttacat cggagacctg 840  
 tgcgggtggcg tatttttgggt tggtcagatg ttctctttcc agccgcggcg ccaactggact 900  
 acgcaggact gcaattgttc catctacgcg gggcacgtta cgggccacag gatggca 957

<210> 224  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

&lt;400&gt; 224

atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg cgcaccaatg	60
gacgttaagt tcccgggtgg cggccagatc gttggcggag tttacttggt gccgcgcagg	120
ggccctagat tgggtgtgcg cgcgactagg aagacttcgg agcggtcgca acctcgtggg	180
aggcgccagc ctatcccca ggcgcgccaa ctcgagggta ggtcctgggc tcagcctggg	240
tatccttggc ccctttacgg caatgagggc tgcgggtggg cgggatggct cctgtcaccc	300
cgtggctctc ggccgtcttg gggcccgaat gatccccggc ggaggtcccg caacttgggt	360
aaggtcatcg ataccctaac ttgcggcttc gccgacctca tgggatacat cccggtcgta	420
ggcgcccccg tgggtggcgt cgccagagcc ctggcgcgatg gcgtcaggct tctggaggac	480
gggggtcaatt atgcaacagg gaatcttccc ggttgctctt tctctatctt cctcttggca	540
ctgctctcgt gcctgactgt tcccgtctcg gcctacaact atcgcaacag ctcggtgtgc	600
taccatgtca ccaacgattg cccgaactcg agcatagtct atgaaaccga ttaccacatc	660
ttacacctcc cgggatgcgt tccttgctg agggaaggga acaagtctac atgctgggtg	720
tctctcacc ccaccgtggc tgcgcaacat ctgaatgctc cgcttgagtc tttgagacgt	780
cacgtggatc tgatggtggg cggcgccact ctctgctccg ccctctacat cggagacgtg	840
tgtgggggtg tgttcttggc cgggtcaactg ttcaccttcc aacctcgccg ccactggacc	900
accaagact gcaattgttc catctacaca ggacatatca caggacacag aatggct	957

&lt;210&gt; 225

&lt;211&gt; 957

&lt;212&gt; DNA

&lt;213&gt; hepatitis C virus

&lt;400&gt; 225

atgagcacga atcctaaact tcaaagaaaa accaaacgta acaccaaccg cgcccccatg	60
gacgttaagt tcccgggtgg tggccagatc gttggcggag tttacttggt gccgcgcagg	120
ggccctaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg	180
aggcgccaac ctatcccca ggcgcgccga tccgagggca gatcctgggc gcagccccggg	240
tatccttggc ccctttacgg caatgagggc tgtgggtggg cagggtggct cctgtcccc	300
cgcggtctc ggccgtcttg gggccctaata gatccccggc ggaggtcccg caacctgggt	360

aaggtcatcg ataccctaac atgcggcttc gccgacctca tgggatacat cccgcttgta 420  
ggcgcccccg tgggtggcgt cgccagagcc ctggcacacg gtgttagggc tgtggaagac 480  
gggatcaact acgcaacagg gaatctcccc ggttgctcct tttctatctt cctcttgga 540  
cttctctcgt gcctcactgt tcccgcgtcg ggcgttaact atcgcaatgc ttcgggcgtt 600  
tatcacatca ccaacgactg cccgaatgcg agcatagtgt acgagaccga caatcacatc 660  
ttacacctcc caggggtgcgt accctgtgtg aagaccggga accagtcgcg gtgttgggtg 720  
gccctcactc ccacagtggc gtcgccttac gtcggtgctc cgctcgagcc cttgcggcgc 780  
catgtggacc tgatggtagg tgctgccacc gtgtgctcgc ccctctacgt cggcgacctg 840  
tgcggtgggt tattcttggg aggccaaatg ttcaccttcc aaccgcgacg ccaactggacg 900  
accaggact gtaattgttc catctacgca gggcatatta cgggccatcg gatggct 957

<210> 226  
<211> 957  
<212> DNA  
<213> hepatitis C virus

<400> 226  
atgagcacga atcctaaacc tcaaagaaaa accaaaagaa acaccaaccg tcgcccacag 60  
gacgtcaagt tcccgggcgg tggtcagatc gttggcggag tttacttggt gccgcgcagg 120  
ggccctagga tgggtgtgcg cgcgactcgg aagacttcgg aacggtcgca accccgtgga 180  
cggcgtcagc ctattcccaa ggcgcgccag cccacgggcc ggtcctgggg tcaacccggg 240  
tacccttggc ccctttacgc caatgagggc ctcgggtggg cagggtggtt gctctcccct 300  
cgaggctctc ggcctaattg gggccccaat gacccccggc gaaaatcgcg taatttgggt 360  
aaggtcatcg ataccctaac gtgcggatc gccgatctca tggggtatat cccgctcgta 420  
ggcgccccca ttgggggcgt cgcaagggtc ctgcacacg gtgtgagggt ccttgaggac 480  
ggggtaaact atgcaacagg gaatttaccg ggttgctctt tctctatctt tattcttgct 540  
cttctctcgt gtctgaccgt tccggcctct gcagttccct accgaaatgc ctctgggatt 600  
tatcatgtta ccaatgattg cccaaactct tccatagtct atgaggcaga taacctgatc 660  
ctacacgcac ctggttgctg gccttggtgc atgacaggta atgtgagtag atgctgggtc 720  
caaattaccc ctacactgtc agccccgagc ctcgagcag tcacggctcc tcttcggaga 780

gccgttgact acctagcggg aggggctgcc ctctgctccg cgttatacgt aggagacgcg 840  
 tgtggggcac tattcttggg aggcctaatg ttcacctata ggctcgcca gcacgtacg 900  
 gtgcagaact gcaactgttc catttacagt ggccatgtta ccggccaccg gatggca 957

<210> 227  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<400> 227  
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acaccaaccg tcgccaacg 60  
 gacgtcaagt tcccgggtgg cggtcagatc gttggcggag tttacttgtt gccgcgcagg 120  
 ggcccccggt tgggtgtgcy cgcgacgaga aagacttccg agcgatccca gccagaggc 180  
 aggcgccaac ctataccaaa ggcgcgccag ccccagggca ggcactgggc tcagcccga 240  
 tacccttggc ctctttatgg aaacgagggc tgtgggtggg caggttggct cctgtcccc 300  
 cgcggtccc ggccacattg gggccccaat gacccccggc gtcgatcccg gaatttgggt 360  
 aaggtcatcg ataccctaac gtgtgggttc gccgatctca tgggttacat tcccgtcgtg 420  
 ggcgcgcctt tgggcggcgt cgcggctgcy ctgcacatg gcgtgagggc aatcgaggac 480  
 gggatcaatt atgcaacagg gaatctcccc ggttgctctt tctctatctt ccttttggca 540  
 ctactctcgt gcctcacaac gccagcttcg gctcttacct acggcaactc cagtgggcta 600  
 taccatctca caaatgattg cccaactcc agcatcgtgc tggaggcgga tgctatgatc 660  
 ttgcatttgc ctggatgctt gccttgtgtg agggtcgatg atcgggtccac ctgttggcat 720  
 gctgtgaccc ccaccctggc cataccaaat gcttcacgc ccgcaacggg attccgcagg 780  
 catgtggatc ttcttgccgg cgccgcagtg gtttgctcat ccctgtacat cggggacctg 840  
 tgtggctctc tctttttggc gggacaacta ttcaccttcc agccccgccg tcattggact 900  
 gtgcaagact gcaactgctc catctatata ggccacgtca ccggccacag gatggct 957

<210> 228  
 <211> 957  
 <212> DNA  
 <213> hepatitis C virus

<220>

<221> misc\_feature  
<222> (383)..(383)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (387)..(387)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (924)..(924)  
<223> n represents any nucleotide

<220>  
<221> misc\_feature  
<222> (928)..(928)  
<223> n represents any nucleotide

<400> 228  
atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60  
gacgtcaagt tcccggggcgg cgccagatc gttggtggag tttacttggt gccgcgcagg 120  
ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacgggtccca gcctagaggc 180  
aggcgccagc ccataccaaa ggtacgccag ccgacaggcc gtagctgggg tcaaccggc 240  
tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtcccc 300  
cgcgggtctc gtcctaattg gggccccaac gacccccggc gaagggtccg caacttgggt 360  
aaggtcatcg atacccttac atncggncta gccgacctca tggggtacat ccctgtccta 420  
ggagggccgc ttggcggcgt tgcggctgcc ctggcgcatt gcgttagggc aatcgaggac 480  
ggggtcaatt acgcaacagg gaatcttcct ggttgctcct tttctatctt cctcttagca 540  
ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggatt 600  
taccatctta ccaatgactg ctccaacaac agcatcggtt ttgaggcgga gaccatgata 660  
ctgcatcttc caggtttgtt cccatgtatc aaggcgggga atgagtcacg atgttggtc 720  
cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgccga 780

cacgtagacc tcctcgttgg ggcagcggca tttgttcgg ccatgtacat cggagacctc 840  
 tgtggtagca taatcttggg agggcagctt tttactttca ggcctaagta ccatcaggtt 900  
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 229  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<400> 229

Met Ser Thr Asn Pro Lys Pro Gln Lys Lys Asn Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu  
 130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
 145 150 155 160



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Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr  
180 185 190

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Ala Ile Leu His Thr Pro  
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Ala Ser Arg Cys Trp Val  
225 230 235 240

Ala Met Thr Pro Thr Val Ala Thr Arg Asp Gly Lys Leu Pro Ala Thr  
245 250 255

Gln Leu Arg Arg His Ile Asp Leu Leu Val Gly Ser Ala Thr Leu Cys  
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Gly  
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg His Trp Thr Thr Gln Gly Cys  
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala  
305 310 315

<210> 230

<211> 319

<212> PRT

<213> hepatitis C virus

<400> 230

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu  
 130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr  
 180 185 190

Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys Ser  
 195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro  
 210 215 220

Gly Cys Val Pro Cys Val Arg Glu Ser Asn Phe Ser Arg Cys Trp Val  
 225 230 235 240

Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ser Ser Ile Pro Thr Thr  
 245 250 255

Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Leu Cys  
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser  
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg Tyr Glu Thr Val Gln Asp Cys  
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala  
305 310 315

<210> 231  
<211> 319  
<212> PRT  
<213> hepatitis C virus

<400> 231

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu  
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
 145 150 155 160

Gly Val Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Thr Pro Val Ser Ala Ala  
 180 185 190

Glu Val Lys Asn Ile Ser Thr Gly Tyr Met Val Thr Asn Asp Cys Thr  
 195 200 205

Asn Asp Ser Ile Thr Trp Gln Leu Gln Ala Ala Val Leu His Val Pro  
 210 215 220

Gly Cys Val Pro Cys Glu Lys Val Gly Asn Thr Ser Arg Cys Trp Ile  
 225 230 235 240

Pro Val Ser Pro Asn Val Ala Val Gln Gln Pro Gly Ala Leu Thr Gln  
 245 250 255

Gly Leu Arg Thr His Ile Asp Met Val Val Met Ser Ala Thr Leu Cys  
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Met Leu Ala Ala  
 275 280 285

Gln Met Phe Ile Val Ser Pro Gln His His Trp Phe Val Gln Asp Cys  
 290 295 300

Asn Cys Ser Ile Tyr Pro Gly Thr Ile Thr Gly His Arg Met Ala  
 305 310 315

<210> 232

<211> 319

<212> PRT

<213> hepatitis C virus

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<400> 232

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Thr Trp Gly Pro Thr Asp Pro  
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Arg Val Ile Asp Thr Ile Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala Val  
180 185 190

Glu Val Arg Asn Ile Ser Ser Ser Tyr Tyr Ala Thr Asn Asp Cys Ser  
195 200 205

# BEST AVAILABLE COPY

Asn Asn Ser Ile Thr Trp Gln Leu Thr Asp Ala Val Leu His Leu Pro  
 210 215 220

Gly Cys Val Pro Cys Glu Asn Asp Asn Gly Thr Leu His Cys Trp Ile  
 225 230 235 240

Gln Val Thr Pro Asn Val Ala Val Lys His Arg Gly Ala Leu Thr Arg  
 245 250 255

Ser Leu Arg Thr His Val Asp Met Ile Val Met Ala Ala Thr Ala Cys  
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile Leu Ser  
 275 280 285

Gln Ala Phe Met Val Ser Pro Gln Arg His Asn Phe Thr Gln Glu Cys  
 290 295 300

Asn Cys Ser Ile Tyr Gln Gly His Ile Thr Gly His Arg Met Ala  
 305 310 315

<210> 233  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (319)..(319)  
 <223> Xaa represents any amino acid

<400> 233

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

# BEST AVAILABLE COPY

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Ser Ala Leu Leu Ser Cys Ile Ser Val Pro Val Ser Ala Val  
180 185 190

Glu Val Lys Asn Thr Ser Thr Ser Tyr Met Val Thr Asn Asp Cys Ser  
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr Pro  
210 215 220

Gly Cys Val Pro Cys Glu Gln Ile Gly Asn Ala Ser Arg Cys Trp Val  
225 230 235 240

Pro Val Ser Pro Asn Val Ala Ile Arg Gln Pro Gly Thr Leu Thr Lys  
245 250 255

Gly Leu Arg Ala His Val Asp Val Ile Val Met Ser Ala Thr Leu Cys  
260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Ile Ala Ala  
 275 280 285

Gln Ala Val Ile Ala Ser Pro Gln Arg His Thr Phe Val Gln Glu Cys  
 290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa  
 305 310 315

<210> 234  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<400> 234

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Asp Arg Arg Pro Thr Gly Lys Ser Trp Gly Lys Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
 100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val



# BEST AVAILABLE COPY

130

135

140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Gly Leu  
180 185 190

Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val Thr Asn Asp Cys Gln  
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro  
210 215 220

Gly Cys Val Pro Cys Glu Glu Lys Gly Asn Ile Ser Arg Cys Trp Ile  
225 230 235 240

Pro Val Ser Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Leu Thr Lys  
245 250 255

Gly Leu Arg Thr His Ile Asp Thr Ile Ile Ala Ser Ala Thr Phe Cys  
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Leu Ala Ser  
275 280 285

Gln Val Phe Ile Ile Ser Pro Gln His His Lys Phe Val Gln Asp Cys  
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala  
305 310 315

<210> 235

<211> 419

<212> PRT

<213> hepatitis C virus

<400> 235

Met Ser Thr Leu Pro Lys Pro Gln Arg Gln Thr Lys Arg Asn Thr Leu  
1 5 10 15

Arg Arg Pro Gln Asn Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Lys Gln Arg His Leu  
50 55 60

Ile Pro Lys Ala Arg Ser Arg Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Lys Gly Cys Gly Leu Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Phe Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Leu Gly Asp  
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Phe Ser Cys Leu Thr Cys Pro Ala Ser Gly Leu  
180 185 190

Glu Tyr Thr Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser  
195 200 205

Asn Gly Ser Ile Val Tyr Glu Ala Glu Asp Val Ile Leu His Leu Pro  
210 215 220

Gly Cys Val Pro Cys Val Thr Thr Gly Asn Gln Ser Ser Cys Trp Thr  
225 230 235 240

Thr Val Ser Thr Thr Val Ala Val Arg Thr Leu Gly Val Thr Thr Ala  
245 250 255

Ser Ile Arg Thr His Val Asp Met Leu Val Gly Ala Arg Gln Leu Cys  
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Phe Gly Ala Val Phe Leu Val Gly  
275 280 285

Gln Ala Phe Thr Phe Arg Pro Arg Arg His Thr Thr Val Gln Thr Cys  
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala Trp  
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ile Gly Leu Val Ile Ser His  
325 330 335

Leu Met Arg Leu Pro Gln Thr Leu Phe Asp Leu Val Ser Gly Thr His  
340 345 350

Trp Gly Val Met Ala Gly Leu Ala Tyr Phe Ser Met Gln Gly Asn Trp  
355 360 365

Ala Lys Val Val Ile Val Leu Ile Met Phe Ser Gly Val Asp Ala Asn  
370 375 380

Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu Thr  
385 390 395 400

Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val Asn Ser  
405 410 415

Asn Gly Ser

<210> 236

<211> 383

<212> PRT

<213> hepatitis C virus

<400> 236

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Gln Leu Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Leu Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr  
180 185 190

Asn Tyr Arg Asn Ser Ser Gly Val Tyr His Val Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Thr Asp Tyr His Ile Leu His Leu Pro  
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Lys Ser Thr Cys Trp Val  
225 230 235 240

Ser Leu Thr Pro Thr Val Ala Ala Gln His Leu Asn Ala Pro Leu Glu  
245 250 255

Ser Leu Arg Arg His Val Asp Leu Met Val Gly Gly Ala Thr Leu Cys  
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Gly Val Phe Leu Val Gly  
275 280 285

Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys  
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala Trp  
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ala Thr Leu Val Leu Ala Gln  
325 330 335

Leu Met Arg Ile Pro Gly Ala Met Val Asp Leu Leu Ala Gly Gly His  
340 345 350

Trp Gly Ile Leu Val Gly Ile Ala Tyr Phe Ser Met Gln Ala Asn Trp  
355 360 365

Ala Lys Val Ile Leu Val Leu Phe Leu Phe Ala Gly Val Asp Ala  
370 375 380

<210> 237  
<211> 319  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (102)..(102)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (105)..(105)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (114)..(114)  
<223> Xaa represents any amino acid

<400> 237

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Xaa Ser Arg Xaa Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp

145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser Ala Val  
180 185 190

Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys Pro  
195 200 205

Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His Leu Pro  
210 215 220

Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp Val  
225 230 235 240

Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro Leu Glu  
245 250 255

Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met Cys  
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly  
275 280 285

Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys  
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala  
305 310 315

<210> 238  
<211> 319  
<212> PRT  
<213> hepatitis C virus

<400> 238

Met Ser Thr Asn Pro Lys Leu Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Gly Val  
180 185 190

Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp Cys Pro  
195 200 205

Asn Ala Ser Ile Val Tyr Glu Thr Asp Asn His Ile Leu His Leu Pro  
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val  
225 230 235 240



Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Val Gly Ala Pro Leu Glu  
245 250 255

Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val Cys  
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly  
275 280 285

Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys  
290 295 300

Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala  
305 310 315

<210> 239  
<211> 319  
<212> PRT  
<213> hepatitis C virus

<400> 239

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val  
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro  
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val  
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala  
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys  
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly  
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys  
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala  
305 310 315

<210> 240

<211> 383

<212> PRT  
<213> hepatitis C virus

<400> 240

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Gln Pro Gln Gly Arg His Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro His Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu  
130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu  
180 185 190

Thr Tyr Gly Asn Ser Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro

195	200	205
Asn Ser Ser Ile Val Leu Glu Ala Asp Ala Met Ile Leu His Leu Pro 210 215 220		
Gly Cys Leu Pro Cys Val Arg Val Asp Asp Arg Ser Thr Cys Trp His 225 230 235 240		
Ala Val Thr Pro Thr Leu Ala Ile Pro Asn Ala Ser Thr Pro Ala Thr 245 250 255		
Gly Phe Arg Arg His Val Asp Leu Leu Ala Gly Ala Ala Val Val Cys 260 265 270		
Ser Ser Leu Tyr Ile Gly Asp Leu Cys Gly Ser Leu Phe Leu Ala Gly 275 280 285		
Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp Cys 290 295 300		
Asn Cys Ser Ile Tyr Thr Gly His Val Thr Gly His Arg Met Ala Trp 305 310 315 320		
Asp Met Met Met Asn Trp Ser Pro Thr Thr Thr Leu Val Leu Ser Ser 325 330 335		
Ile Leu Arg Val Pro Glu Ile Cys Ala Ser Val Ile Phe Gly Gly His 340 345 350		
Trp Gly Ile Leu Leu Ala Val Ala Tyr Phe Gly Met Ala Gly Asn Trp 355 360 365		
Leu Lys Val Leu Ala Val Leu Phe Leu Phe Ala Gly Val Glu Ala 370 375 380		

<210> 241  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 241

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Glu His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Ser Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser  
50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Tyr His Ile Leu His  
85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys  
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro  
115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met  
180 185 190

Ala

<210> 242

<211> 193

<212> PRT

<213> hepatitis C virus

<400> 242

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Leu Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Val His His Ile Leu His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys  
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro Tyr Leu Gly Ala Pro  
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr  
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ile Phe Leu  
145 150 155 160

Ala Gly Gln Met Phe Thr Phe Arg Pro Arg Leu His Trp Thr Thr Gln  
165 170 175

Glu Cys Asn Cys Ser Thr Tyr Pro Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

<210> 243  
<211> 193  
<212> PRT  
<213> hepatitis C virus

<400> 243

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys  
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro  
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg Met  
 180 185 190

Ala

<210> 244  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 244

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Val Leu Leu Ser Arg Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His  
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys  
 100 105 110

Trp Ile Pro Leu Thr Pro Thr Val Ala Val Pro Tyr Leu Gly Ala Pro  
 115 120 125

Leu Thr Ser Val Arg Gln His Val Asp Leu Met Val Gly Ala Ala Thr  
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp His Cys Gly Gly Val Phe Leu  
 145 150 155 160



Ala Gly Gln Met Val Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

<210> 245  
<211> 149  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (14)..(14)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (20)..(20)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (120)..(120)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (134)..(134)  
<223> Xaa represents any amino acid

<400> 245

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser  
1 5 10 15

Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala  
20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys  
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu  
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp  
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu  
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val  
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val  
115 120 125

Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp  
130 135 140

Cys Asn Cys Ser Ile  
145

<210> 246  
<211> 119  
<212> PRT  
<213> hepatitis C virus

<400> 246

Tyr His Ile Thr Asn Asp Cys Pro Asn Ser Ser Val Val Tyr Glu Thr  
1 5 10 15

Asp His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val Arg Thr  
20 25 30

Gly Asn Val Ser Arg Cys Trp Thr Pro Val Thr Pro Thr Val Ala Ala  
35 40 45

Val Ser Val Asp Ala Pro Leu Glu Ser Phe Arg Arg His Val Asp Leu  
50 55 60

Met Val Gly Ala Ala Thr Leu Cys Ser Val Leu Tyr Val Gly Asp Leu  
65 70 75 80

Cys Gly Gly Ala Phe Leu Val Gly Gln Met Phe Thr Phe Gln Pro Arg  
85 90 95

Arg His Trp Thr Thr Gln Asp Cys Asn Cys Ser Ile Tyr Thr Gly His  
100 105 110

Ile Thr Gly His Arg Met Ala  
115

<210> 247  
<211> 94  
<212> PRT  
<213> hepatitis C virus

<400> 247

Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile Arg Arg Pro Gln Asp Val  
1 5 10 15

Lys Phe Pro Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Val Leu Pro  
20 25 30

Arg Arg Gly Pro Arg Leu Gly Val Cys Ala Thr Arg Lys Thr Ser Glu  
35 40 45

Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg  
50 55 60

Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr  
65 70 75 80

Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp Leu Leu Ser Pro  
85 90

<210> 248  
<211> 100  
<212> PRT  
<213> hepatitis C virus

<400> 248

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro  
100

<210> 249  
<211> 100  
<212> PRT  
<213> hepatitis C virus

<400> 249

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro  
100

<210> 250  
<211> 68  
<212> PRT  
<213> hepatitis C virus

<400> 250

Thr Asn Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile  
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val  
20 25 30

Arg Ala Thr Gly Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg  
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln  
50 55 60

Pro Gly Phe Pro  
65

<210> 251  
<211> 80  
<212> PRT  
<213> hepatitis C virus

<400> 251

Lys Thr Lys Arg Asn Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro  
1 5 10 15

Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly  
20 25 30

Pro Arg Leu Gly Val Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln  
35 40 45

Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly  
50 55 60

Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Asn Glu  
65 70 75 80

<210> 252

<211> 74

<212> PRT

<213> hepatitis C virus

<400> 252

Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile  
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val  
20 25 30

Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg  
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln  
50 55 60

Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Lys  
65 70

<210> 253  
<211> 100  
<212> PRT  
<213> hepatitis C virus

<400> 253

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Ala Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro  
100

<210> 254  
<211> 128  
<212> PRT  
<213> hepatitis C virus

<400> 254

Val Glu Val Lys Asp Thr Gly Asp Ser Tyr Met Pro Thr Asn Asp Cys  
1 5 10 15

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr  
20 25 30

Pro Gly Cys Val Pro Cys Glu Arg Thr Ala Asn Val Ser Arg Cys Trp  
35 40 45

Val Pro Val Ala Pro Asn Leu Ala Ile Ser Gln Pro Gly Ala Leu Thr  
50 55 60

Lys Gly Leu Arg Ala His Ile Asp Ile Ile Val Met Ser Ala Thr Val  
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Leu Ala  
85 90 95

Ala Gln Val Val Val Val Ser Pro Gln His His Thr Phe Val Gln Glu  
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly Arg Ile Thr Gly His Arg Met Ala  
115 120 125

<210> 255  
<211> 128  
<212> PRT  
<213> hepatitis C virus

<400> 255

Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys  
1 5 10 15

Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val Ile Leu His Thr  
20 25 30

Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr Ser Thr Cys Trp  
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val Gly Ala Thr Thr  
50 55 60

Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly Ala Ala Thr Met  
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala Val Phe Leu Val



85

90

95

Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln Thr Val Gln Thr  
 100 105 110

Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly His Arg Met Ala  
 115 120 125

<210> 256  
 <211> 128  
 <212> PRT  
 <213> hepatitis C virus

<400> 256

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys  
 1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu  
 20 25 30

Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Thr Ser Arg Cys Trp  
 35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Ala His Pro Gly Ala Pro Leu  
 50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu  
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Met  
 85 90 95

Gly Gln Met Ile Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu  
 100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala  
 115 120 125

<210> 257  
 <211> 128

<212> PRT  
<213> hepatitis C virus

<400> 257

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys  
1 5 10 15

Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His Leu  
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys Trp  
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro Leu  
50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val  
65 70 75 80

Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val  
85 90 95

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp  
100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala  
115 120 125

<210> 258  
<211> 128  
<212> PRT  
<213> hepatitis C virus

<400> 258

Val His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys  
1 5 10 15

Pro Asn Thr Ser Ile Val Tyr Glu Thr Glu His His Ile Met His Leu  
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Glu Asn Thr Ser Arg Cys Trp  
35 40 45

Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Pro Asn Ala Pro Leu  
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met  
65 70 75 80

Cys Ser Ala Phe Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val  
85 90 95

Gly Gln Leu Phe Asp Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp  
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala  
115 120 125

<210> 259  
<211> 128  
<212> PRT  
<213> hepatitis C virus

<400> 259

Ile His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys  
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu  
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp  
35 40 45

Val Ala Leu Ser Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Val  
50 55 60

Glu Ser Phe Arg Arg His Val Asp Met Met Val Gly Ala Ala Thr Val  
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val  
85 90 95

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp  
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Gly Met Ala  
115 120 125

<210> 260  
<211> 128  
<212> PRT  
<213> hepatitis C virus

<400> 260

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys  
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His Leu  
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp  
35 40 45

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu  
50 55 60

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Ala  
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val  
85 90 95

Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp  
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met Ala  
115 120 125

<210> 261

<211> 169  
<212> PRT  
<213> hepatitis C virus

<400> 261

Leu Ala His Gly Val Arg Ala Val Glu Asp Gly Ile Asn Tyr Ala Thr  
1 5 10 15

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu  
20 25 30

Ser Cys Leu Thr Val Pro Ala Ser Ala Val His Tyr His Asn Thr Ser  
35 40 45

Gly Ile Tyr His Leu Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Phe  
50 55 60

Glu Ala Val His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val  
65 70 75 80

Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu  
85 90 95

Ala Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser Met Arg Arg His Val  
100 105 110

Asp Leu Met Val Gly Thr Ala Thr Leu Cys Ser Ala Leu Tyr Val Gly  
115 120 125

Asp Leu Cys Gly Gly Ile Phe Leu Ala Gly Gln Met Phe Thr Phe Arg  
130 135 140

Pro Arg Leu His Trp Thr Thr Gln Glu Cys Asn Cys Ser Thr Tyr Pro  
145 150 155 160

Gly His Ile Thr Gly His Arg Met Ala  
165

<210> 262  
<211> 128  
<212> PRT

<213> hepatitis C virus

<400> 262

Val His Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys  
1 5 10 15

Pro Asn Ser Ser Ile Val Phe Glu Ala Glu His His Ile Leu His Leu  
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp  
35 40 45

Ile Ala Leu Thr Pro Thr Leu Ala Ala Pro His Ile Gly Ala Pro Leu  
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr Leu  
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ile Phe Leu Val  
85 90 95

Gly Gln Met Phe Asn Phe Arg Pro Arg Leu His Trp Thr Thr Gln Glu  
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala  
115 120 125

<210> 263

<211> 128

<212> PRT

<213> hepatitis C virus

<400> 263

Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys  
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His Ala  
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys Trp  
 35 40 45

Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val Thr  
 50 55 60

Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala Leu  
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val  
 85 90 95

Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asp  
 100 105 110

Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met Ala  
 115 120 125

<210> 264  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 264  
 ctccacagtc actgagagcg acatccgtac ggaggaggca atctaccaat gttgtgacct 60  
 cgacccccaa gcccgcgtgg ccatcaagtc cctcaccgag aggctttatg ttggggggccc 120  
 tcttaccaat tcaagggggg agaactgcgg ctatcgcagg tgccgcgcga gcggcgact 180  
 gacaactagc tgtggttaaca ccctcacttg ctacatcaag gcccgggcag cctgtcgagc 240  
 cgcagggctc caggactgca ccatgctcgt gtgtggcgac gacttagtcg ttatctgtga 300  
 aagcgcgggg gtccaggagg acgcggcgag cctgagagcc 340

<210> 265  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 265  
ctcaacggtc actgagaatg acatccgtac tgaggaatca atttaccaat gttgtgactt 60  
ggcccccgaa gccaggcagg ccataaggtc gctcacagag cggctttatg tcgggggtcc 120  
cctgactaat tcgaaggggc agaactgcgg ttatcgccgg tgccgcgcaa gtggcgtgct 180  
gacgactagc tgcggcaaca ccctcacatg ttacttgaag gccactgcgg cctgtcgagc 240  
tgcaaagctc caggactgca cgatgctcgt gaacggagac gaccttgctg ttatctgtga 300  
gagtgcggga acccaggagg atgcggcggc cctacgagcc 340

<210> 266  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> n represents any nucleotide

<400> 266  
ntcaacagtc accgagaacg acatccgtgt tgaggagtca atttaccaat gttgtgactt 60  
ggcccccgag gccagacagg ccataaagtc gctcacagag cggctttata tcgggggtcc 120  
cctgactaat tcaaaggggc agaactgtgg ctatcgccga tgccgcgcaa gcggcgtgct 180  
gacgaccagc tgcggtaata cccttacatg ttacctaaag gcctctgcag cctgtcgagc 240  
tgccaagctc caggactgca cgatgctcgt gtgcggggac gaccttgctg ttatctgtga 300  
aagcgcgga acccaagagg acgcggcgag cctacgagtc 340

<210> 267  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 267  
ctcaaccgtc actgagagag acatcaggac tgaggagtcc atatatcggg cttgttcctt 60  
gcccaggagg gccacactg ccatacactc actgactgag agactttacg tgggagggcc 120



catgttcaac agcaagggcc agacctgcgg gtacaggcgt tgccgcgcca gcggggtgct	180
taccactagc atggggaaca ccatcacatg ctatgtgaaa gccttagcgg cctgtaaggc	240
tgcagggata attgcgcca caatgctggg atgcggcgat gacttggttg tcatctcaga	300
gagccagggg accgaggagg acgagcggaa cctgagagcc	340

<210> 268  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 268	
ctcaaccgtc acggagaggg acataagaac agaagaatcc atatatcagg cttgttctct	60
gcctcaagaa gccagaactg tcatacactc gctcactgag agactttacg taggagggcc	120
catgacaaac agcaaagggc aatcctgcgg ctacaggcgt tgccgcgcaa gcggtgtttt	180
caccaccagc atggggaata ccatgacatg ttacatcaaa gcccttgag cgtgtaaggc	240
tgcagggatc gtggaccctg ttatgttggg gtgtggagac gacctggtcg tcatctcaga	300
gagccaaggt aacgaggagg acgagcgaaa cctgagagct	340

<210> 269  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 269	
ctcaactgtc actgaacagg acatcagggt ggaagaggag atataccaat gctgtaacct	60
tgaaccggag gccaggagag tgatctcctc cctcacggag cggctttact gcgggggccc	120
tatgttcaac agcaaggggg cccaatgtgg ttatcgccgg tgccgtgcca gtggagtcct	180
gcctaccagc ttcggcaaca caatcacttg ttacatcaag gccacagcgg ctgcgaaggc	240
cgcaggcctc cggaaccggg actttcttgt ctgcggagat gatctggtcg tagtggctga	300
gagcgatggc gtcgatgagg atagagcagc cctgagagcc	340

<210> 270  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 270  
ctctactgtc actgaacatg acatcaggac ggaggaggag atataccaat gctgtgacct 60  
tgagccagag gctcggaagg cgatcagcgc tctcacagag cggctgtaca tcggaggtcc 120  
catgtacaac agtaaggggc tccagtgcgg ctatcgccgc tgccgcgcca gcggcgtctt 180  
gcctaccagc ttcggcaata caataacctg ttacatcaag gccactgcag ccagcagggc 240  
tgcggtctc aaagacccat ctttccttgt ctgcggagac gatttggtgg ttgtatctga 300  
aagctgcggc gtcgaggagg acagagcagc tctgcgagcc 340

<210> 271  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 271  
ctccactgta accgaaaagg acatcagggc cgaggaggag gtctatcagt gttgtgacct 60  
ggagcccga gcccgcaagg caattaccgc cctaacagag agactctacg tgggcggtcc 120  
catgcataac agcaaggagg acctgtgcgg gtatcgaga tgcgcgcaa gcggcgtcta 180  
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcaaagc 240  
ggcggggctg agagactgca ccatgttggc ctgtggtgat gacctggttgc tcacgctga 300  
gagcgatggc gtagaggagg acaaacgacc cctcggagcc 340

<210> 272  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 272  
ctccactgta accgaaaagg acatcagggc cgaggaggag gtatatcagt gttgtgacct 60

ggagcccgag gcccgagag caattaccgc cctaacagag agactctacg tgggcggtcc	120
catgcataac agcaggggag acctgtgcgg gtatcgaga tgccgtgcga gggcggtcta	180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcattgctga	300
aagcgatggc gtagaggagg acaaacgagc cctcggagcc	340

<210> 273  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 273	
ctccactgta accgaaaag acatcagggc cgaggaggag gtatatcagt gttgtgacct	60
ggagcccgaa gcccgcaagg taattaccgc cctaacagag agactctatg tgggcggtcc	120
catgcataat agcaaaggag acctgtgcgg gtatcgaga tgccgcgcaa gggcggtcta	180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ccatcagggc	240
gtcagggctg agagactgca ctatgctggt ctatggtgac gacctggtcg tcattgccga	300
gagcgatggc gtagaggagg acaaacgagc cctcggagtc	340

<210> 274  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 274	
ctccactgta accgaaaag acatcagggc cgaggaggag gtgtatcagt gttgtgacct	60
ggagcccgag gcccgcaagg caattactgc cctaacagag agactctatg tgggcggtcc	120
catgcataac agcaagggag acctgtgtgg gtatcgaga tgccgcgcaa gggcggtcta	180
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcatcgctga	300
gagcgatggc gttgaggagg acaaacgagc cctcggagcc	340

<210> 275  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (329)..(329)  
<223> n represents any nucleotide

<400> 275  
ctccactgtg actgagagag acatcaaggt cgaagaagaa gtctatcagt gttgtgatct 60  
ggagcccagag gcccgcaagg taatagccgc cctcacggag agactctacg tgggcggccc 120  
catgcataac agcaagggag acctttgcgg gtatcgtaga tgccgcgcga gcggcgata 180  
caccaccagc ttcgggaaca caatgacgtg ctaccttaag gcctcagcag ccatcagggc 240  
tgcggggcta aaggattgca ccatgctggt ttgcggtgac gacctagtcg tgatcgccga 300  
gagcgggtggc gttgaggagg acaaacganc cctcggagct 340

<210> 276  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 276  
ctccacgggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60  
ggagcccgaag gcccgcaagg tgatatccgc cctaaccgaa agactctacg tgggcgggtcc 120  
catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180  
caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgagg ctactagggc 240  
cgcaggtctg aaagggtgca gcatgctggt ttgtggagac gacttagtcg tcactcgcca 300  
gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 277  
<211> 340  
<212> DNA

<213> hepatitis C virus

<400> 277

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ctcgaccggt accgaacatg acataatgac tgaagagtct atttaccat cattgtactt      60
gcagcctgag gcgcgtgtgg caatacggtc actcaccaa cgctgtact gtggaggccc      120
catgtataac agcaaggggc aacaatgtgg ttatcgtaga tgccgcgcca gcggcgtctt      180
caccactagt atgggcaaca ccatgacgtg ctacattaag gctttagcct cctgtagagc      240
cgcaaagctc caggactgca cgctcctggt gtgtggtgat gatcttgtgg ccatttgcca      300
gagccagggg acgcacgagg ataaagcgag cctgagagcc      340
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<210> 278

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 278

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Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr Gln
1          5          10          15

Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu Thr
          20          25          30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu Asn
          35          40          45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
          50          55          60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala
65          70          75          80

Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
          85          90          95

Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Leu Arg
          100          105          110
```

Ala

<210> 279  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 279

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Cys Arg Ala  
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ala Leu Arg  
100 105 110

Ala

<210> 280  
<211> 74  
<212> PRT  
<213> hepatitis C virus

<400> 280

Ile Tyr Gln Cys Cys Asp Leu His Pro Asp Ala Arg Ala Ala Ile Lys  
1 5 10 15

Asn Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys  
20 25 30

Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr  
35 40 45

Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala  
50 55 60

Cys Arg Ala Ala Gly Leu Arg Asp Cys Thr  
65 70

<210> 281

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 281

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg  
1 5 10 15

Ala Cys Ser Leu Pro Glu Glu Ala His Thr Ala Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met  
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala  
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg  
100 105 110

Ala

<210> 282  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 282

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Ala Cys Ser Leu Pro Gln Glu Ala Arg Thr Val Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys Gly Gln Ser  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala  
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Gln Gly Asn Glu Glu Asp Glu Arg Asn Leu Arg  
100 105 110

Ala

<210> 283  
<211> 74  
<212> PRT  
<213> hepatitis C virus



<400> 283

Ile Tyr Gln Ser Cys Ser Leu Pro Glu Glu Ala Arg Thr Ala Ile His  
1 5 10 15

Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys  
20 25 30

Gly Gln Ser Cys Gly Tyr Arg Arg Cys Arg Ala Ser Ala Val Leu Thr  
35 40 45

Thr Ser Met Gly Asn Thr Leu Thr Cys Tyr Val Lys Ala Arg Ala Ala  
50 55 60

Cys Asn Ala Ala Gly Ile Val Ala Pro Thr  
65 70

<210> 284

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 284

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu  
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Leu Asn Ser Lys Gly Gln Thr  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Gln Ala Ala Cys Lys Ala  
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val

85

90

95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg  
 100 105 110

Ala

<210> 285  
 <211> 71  
 <212> PRT  
 <213> hepatitis C virus

&lt;400&gt; 285

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
 20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
 35 40 45

Arg Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp  
 50 55 60

Leu Val Val Val Ala Glu Ser  
 65 70

<210> 286  
 <211> 71  
 <212> PRT  
 <213> hepatitis C virus

&lt;400&gt; 286

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 287  
<211> 71  
<212> PRT  
<213> hepatitis C virus

<400> 287

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 288  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 288

Ser Thr Val Thr Glu His Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Met Tyr Asn Ser Lys Gly Leu Gln  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe  
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Ser Arg Ala  
 65 70 75 80

Ala Gly Leu Lys Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Val Ser Glu Ser Cys Gly Val Glu Glu Asp Arg Ala Ala Leu Arg  
 100 105 110

Ala

<210> 289  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 289

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe

50

55

60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Lys Ala  
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Pro Leu Gly  
100 105 110

Ala

<210> 290  
<211> 113  
<212> PRT  
<213> hepatitis C virus

&lt;400&gt; 290

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Thr Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
100 105 110

Ala

<210> 291  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 291

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
65 70 75 80

Ser Gly Leu Arg Asp Cys Thr Met Leu Val Tyr Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
100 105 110

Val

<210> 292  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 292

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
100 105 110

Ala

<210> 293

<211> 113

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC\_FEATURE

<222> (110)..(110)

<223> Xaa represents any amino acid

<400> 293

Ser Thr Val Thr Glu Arg Asp Ile Lys Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ala Ala Leu Thr

20

25

30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Xaa Leu Gly  
 100 105 110

Ala

&lt;210&gt; 294

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; hepatitis C virus

&lt;400&gt; 294

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Thr Arg Lys Val Ile Ser Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Leu Thr Cys Phe Leu Lys Ala Thr Ala Ala Thr Lys Ala  
 65 70 75 80



Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Arg Arg Ala Leu Gly  
100 105 110

Ala

<210> 295  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 295

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg  
100 105 110

Ala

<210> 296  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 296

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Lys Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Leu Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg  
100 105 110

Ala

<210> 297  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (22)..(22)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE

<222> (8)..(8)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (24)..(24)  
<223> Xaa represents any amino acid

<400> 297

Pro Thr Val Thr Glu Arg Asp Xaa Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asn Leu Glu Xaa Asp Xaa Arg Lys Val Ile Asn Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Ile Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Ile Gly Ile Asp Glu Asp Lys Gln Ala Leu Arg  
100 105 110

Thr

<210> 298  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE

<222> (4)..(4)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (109)..(109)  
<223> Xaa represents any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (111)..(111)  
<223> Xaa represents any amino acid

<400> 298

Ser	Thr	Val	Xaa	Glu	Arg	Asp	Ile	Arg	Thr	Glu	Gly	Glu	Val	Tyr	Gln
1				5					10					15	

Cys	Cys	Asp	Leu	Glu	Pro	Glu	Ala	Arg	Lys	Val	Ile	Thr	Ala	Leu	Thr
			20					25					30		

Glu	Arg	Leu	Tyr	Val	Gly	Gly	Pro	Met	Phe	Asn	Ser	Lys	Gly	Asp	Leu
		35					40					45			

Cys	Gly	Gln	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Phe
	50					55					60				

Gly	Asn	Thr	Leu	Thr	Cys	Tyr	Leu	Lys	Ala	Thr	Ala	Ala	Thr	Arg	Ala
65					70					75				80	

Ala	Gly	Leu	Lys	Asp	Cys	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
				85					90					95	

Val	Ile	Ser	Glu	Ser	Ala	Gly	Val	Glu	Glu	Asp	Pro	Xaa	Thr	Xaa	Arg
			100					105					110		

Pro

<210> 299  
<211> 74  
<212> PRT  
<213> hepatitis C virus

<400> 299

Val Tyr Gln Cys Cys Asn Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr  
1 5 10 15

Ala Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys  
20 25 30

Gly Asp Leu Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr  
35 40 45

Thr Ser Phe Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala  
50 55 60

Ile Arg Ala Ala Gly Leu Arg Asp Cys Thr  
65 70

<210> 300  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 300

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Ser Cys Asp Leu Gln Pro Glu Ala Arg Ala Ala Ile Arg Ser Leu Thr  
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala  
65 70 75 80

Ala Arg Leu Arg Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Ser Leu Arg  
100 105 110

Ala

<210> 301  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 301

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Ser Leu Tyr Leu Gln Pro Glu Ala Arg Val Ala Ile Arg Ser Leu Thr  
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala  
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Lys Ala Ser Leu Arg  
100 105 110

Ala

<210> 302  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 302

Ser Ala Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg Val  
1 5 10